MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

Changes for the Better

Revision:C
- MUZ-GA25VA(H)-E4 has been added.

Please void OB379 REVISED EDITION-B.

OUTDOOR UNIT

SERVICE MANUAL

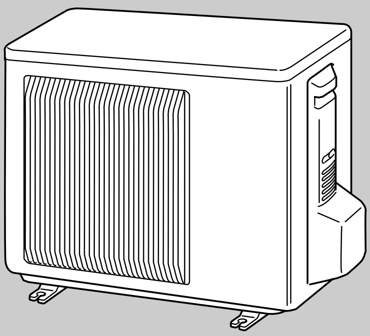
HFC utilized R410A

No. OB379
REVISED EDITION-C

Wireless type
Models

MUZ-GA25VA - E1
MUZ-GA25VA - E2
MUZ-GA25VA - E3
MUZ-GA25VA - E4
MUZ-GA35VA - E1
MUZ-GA35VA - E2
MUZ-GA25VAH - E1
MUZ-GA25VAH - E2
MUZ-GA25VAH - E3
MUZ-GA25VAH - E4
MUZ-GA35VAH - E1
MUZ-GA35VAH - E2

Indoor unit service manual
MSZ-GA•VA Series (OB378)
MSZ-CB•VA Series (OB441)



CONTENTS

NOTE:
RoHS compliant products have <G> mark on the spec name plate.
For servicing of RoHS compliant products, refer to the RoHS Parts List.

CE

Revision:A

•Alternative inverter P.C.board has been added(Refer to 11-7.1. Inverter P.C.board (Alternative)). FUSE F901 has been equipped to MUZ-GA35.

Model	6. Wiring diagram	11-6.Ⓝ Check of inverter P.C.board
MUZ-GA25VA	No change	No change
MUZ-GA25VAH		
MUZ-GA35VA	Change	Change
MUZ-GA35VAH		

• E2 model has been added.
Quick clean kit has been removed.

Revision:B

•MUZ-GA25VA(H)- E3 has been added.
•11-2. Failure mode recall function has been changed.
•RoHS PARTS LIST has been added.

Revision:C

•MUZ-GA25VA(H)- E4 has been added.
•Solenoid valve coil has been removed.
(MUZ-GA25VA- E3 :Serial No. 6021351T~ , MUZ-GA25VAH- E3 :Serial No. 7000001T~)

1 TECHNICAL CHANGES

MUZ-A09YV -E1 → MUZ-GA25VA -E1
MUZ-A09YVH -E1 → MUZ-GA25VAH -E1

1.Indication of capacity has been changed.(BTU base → kW base)
2.Control method between indoor and outdoor unit has been changed.
3.Power supply method has been changed (change to supply from outdoor unit).
4.Terminal block for power supply has been added.
5.Power P.C. board has been changed.
6.Inverter P.C. board has been changed.
7.Refrigerant circuit has been changed.
- Compressor has been changed.(KNB073FBVH→KNB065FDTH)
- LEV has been removed and capillary tube has been added.
- Bypass circuit for low outside temperature operation has been added.
- Specification and position of muffler have been changed.
- Path of outdoor heat exchanger has been changed.
- 4-way valve and R.V. coil have been changed.
- Stop valve has been changed.

8.Fan motor has been changed. (AC)
9.Shape of grille has been changed.
10.Shape of service panel has been changed.
11.Shape of propeller has been changed.
12.Quick Clean Kit has been added.
13.Symbol on terminal block has been changed (to S1/S2/S3).

MUZ-A12YV -E1 → MUZ-GA35VA -E1
MUZ-A12YVH -E1 → MUZ-GA35VAH -E1

1.Indication of capacity has been changed.(BTU base → kW base)
2.Control method between indoor and outdoor unit has been changed.
3.Power supply method has been changed (change to supply from outdoor unit).
4.Terminal block for power supply has been added.
5.Power P.C. board has been changed.
6.Inverter P.C. board has been changed.
7.Refrigerant circuit has been changed.
- Compressor has been changed.(KNB092FAAH→KNB073FDVH)
- Specification and position of muffler have been changed.
- Path of outdoor heat exchanger has been changed.
- 4-way valve and R.V. coil have been changed.
- Stop valve has been changed.

8.Fan motor has been changed.(AC→DC)
9.Shape of grille has been changed.
10.Shape of service panel has been changed.
11.Shape of propeller has been changed.
12.Quick Clean Kit has been added.
13.Symbol on terminal block has been changed (to S1/S2/S3).

MUZ-GA25VA -E1 → MUZ-GA25VA -E2
MUZ-GA25VAH -E1 → MUZ-GA25VAH -E2
MUZ-GA35VA -E1 → MUZ-GA35VA -E2
MUZ-GA35VAH -E1 → MUZ-GA35VAH -E2

1.Quick clean kit has been removed.

MUZ-GA25VA -E2 → MUZ-GA25VA -E3
MUZ-GA25VAH -E2 → MUZ-GA25VAH -E3

1.Capillary tube for heating has been added.
2.Solenoid valve coil has been removed.(GA25VA-E3:Serial No. 6021351T~ , GA25VAH-E3:Serial No. 7000001T~)

MUZ-GA25VA -E3 → MUZ-GA25VA -E4
MUZ-GA25VAH -E3 → MUZ-GA25VAH -E4

1.Refrigerant circuit has been changed.
2.Solenoid valve coil has been removed.

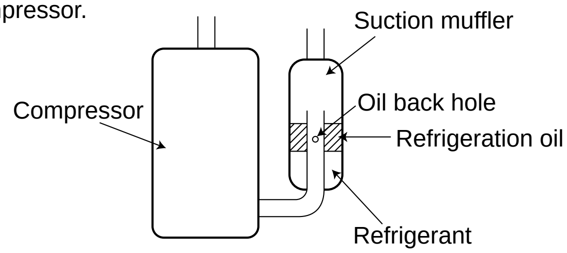
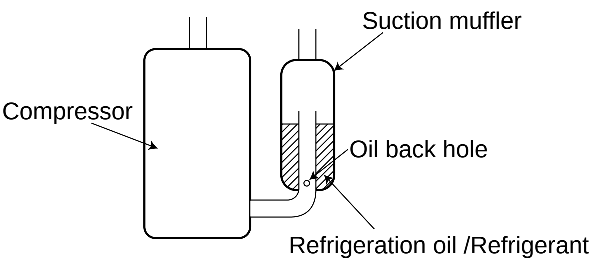
INFORMATION FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

- This room air conditioner adopts HFC refrigerant (R410A) which never destroys the ozone layer.
- Pay particular attention to the following points, though the basic installation procedure is same as that for R22 air conditioners.

① As R410A has working pressure approximate 1.6 times as high as that of R22, some special tools and piping parts/materials are required. Refer to the table below.
② Take sufficient care not to allow water and other contaminations to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminations than R22.
③ For refrigerant piping, use clean, pressure-proof parts/materials specifically designed for R410A. (Refer to 2. Refrigerant piping.)
④ Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

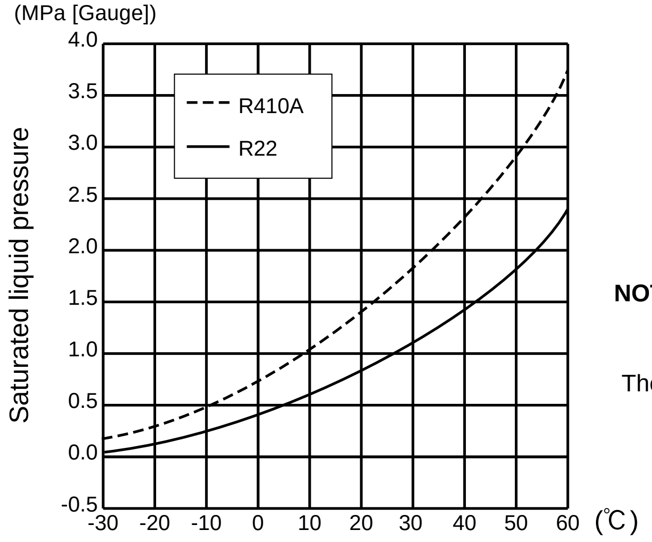
		New refrigerant	Previous refrigerant
Refrigerant	Refrigerant	R410A	R22
	Composition (Ratio)	HFC-32: HFC-125 (50%:50%)	R22 (100%)
	Refrigerant handling	Pseudo-azeotropic refrigerant	Single refrigerant
	Chlorine	Not included	Included
	Safety group (ASHRAE)	A1/A1	A1
	Molecular weight	72.6	86.5
	Boiling point (℃)	-51.4	-40.8
	Steam pressure [25℃](Mpa)	1.557	0.94
	Saturated steam density [25℃](Kg/m³)	64	44.4
	Combustibility	Non combustible	Non combustible
	ODP ※1	0	0.055
	GWP ※2	1730	1700
	Refrigerant charge method	From liquid phase in cylinder	Gas phase
	Additional charge on leakage	Possible	Possible
Refrigeration oil	Kind	Incompatible oil	Compatible oil
	Color	Non	Light yellow
	Smell	Non	Non

※1 :Ozone Destruction Parameter : based on CFC-11
※2 :Global Warmth Parameter : based on CO_2

<table>
<tr><th></th><th>New Specification</th><th>Current Specification</th></tr>
<tr><td>Compressor</td><td>The incompatible refrigeration oil easily separates from refrigerant and is in the upper layer inside the suction muffler. Raising position of the oil back hole enables to back the refrigeration oil of the upper layer to flow back to the compressor.

</td><td>Since refrigerant and refrigeration oil are compatible each, refrigeration oil goes back to the compressor through the lower position oil back hole.

</td></tr>
</table>

NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).
The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/㎠ [Gauge])**

Conversion chart of refrigerant temperature and pressure



NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).

The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/㎠ [Gauge])**

1.Tools dedicated for the air conditioner with R410A refrigerant

The following tools are required for R410A refrigerant. Some R22 tools can be substituted for R410A tools.
The diameter of the service port on the stop valve in outdoor unit has been changed to prevent any other refrigerant being charged into the unit. Cap size has been changed from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.

R410A tools	Can R22 tools be used?	Description
Gauge manifold	No	R410A has high pressures beyond the measurement range of existing gauges. Port diameters have been changed to prevent any other refrigerant from being charged into the unit.
Charge hose	No	Hose material and cap size have been changed to improve the pressure resistance.
Gas leak detector	No	Dedicated for HFC refrigerant.
Torque wrench	Yes	6.35 mm and 9.52 mm
	No	12.7 mm
Flare tool	Yes	Clamp bar hole has been enlarged to reinforce the spring strength in the tool.
Flare gauge	New	Provided for flaring work (to be used with R22 flare tool).
Vacuum pump adapter	New	Provided to prevent the back flow of oil. This adapter enables you to use vacuum pumps.
Electronic scale for refrigerant charging	New	It is difficult to measure R410A with a charging cylinder because the refrigerant bubbles due to high pressure and high-speed vaporization

No : Not Substitutable for R410A   Yes : Substitutable for R410A

2.Refrigerant piping

① Specifications

Use the refrigerant pipes that meet the following specifications.

Pipe	Outside diameter mm	Wall thickness	Insulation material
For liquid	6.35	0.8 mm	Heat resisting foam plastic Specific gravity 0.045 Thickness 8 mm
For gas	9.52	0.8 mm	
	12.7	0.8 mm	

- Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm. Never use any pipe with a thickness less than 0.8mm, as the pressure resistance is insufficient.

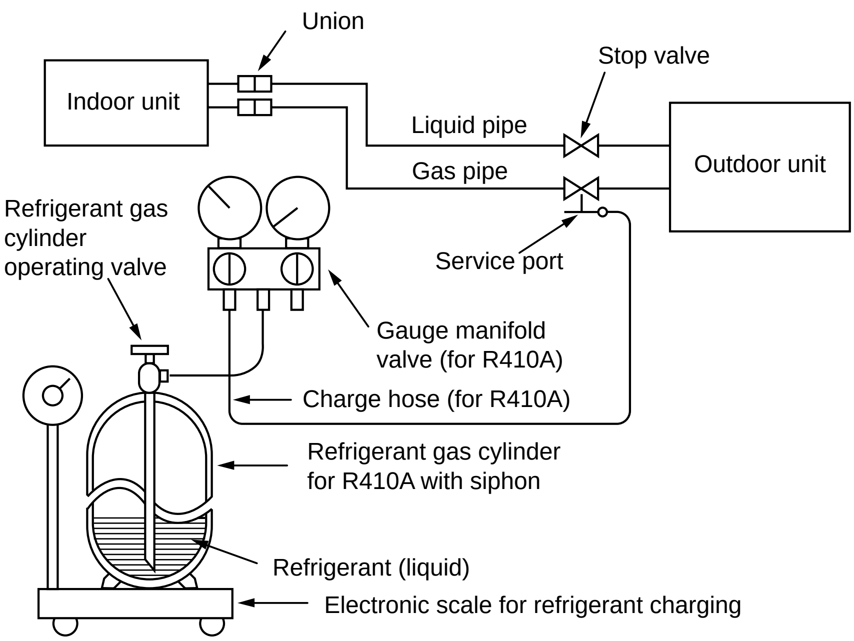
② Flaring work and flare nut
Flaring work for R410A pipe differs from that for R22 pipe.
For details of flaring work, refer to Installation manual “FLARING WORK”.

Pipe diameter	Dimension of flare nut	
mm	R410A	R22
6.35	17	17
9.52	22	22
12.7	26	24

3.Refrigerant oil
Apply the special refrigeration oil (accessories: packed with indoor unit) to the flare and the union seat surfaces.

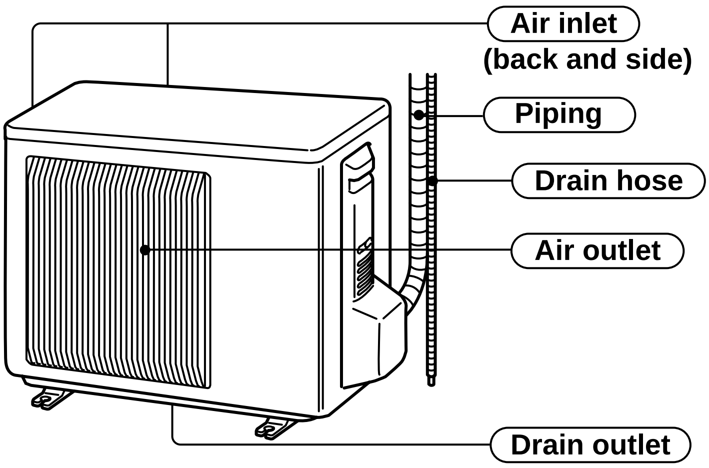
4.Air purge
- Do not discharge the refrigerant into the atmosphere.
  Take care not to discharge refrigerant into the atmosphere during installation, reinstallation, or repairs to the refrigerant circuit.
- Use the vacuum pump for air purging for the purpose of environmental protection.

5.Additional charge
For additional charging, charge the refrigerant from liquid phase of the gas cylinder.
If the refrigerant is charged from the gas phase, composition change may occur in the refrigerant inside the cylinder and the outdoor unit. In this case, ability of the refrigeration cycle decreases or normal operation can be impossible. However, charging the liquid refrigerant all at once may cause the compressor to be locked. Thus, charge the refrigerant slowly.



2 PART NAMES AND FUNCTIONS

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH



ACCESSORIES

		MUZ-GA25VA - E1 MUZ-GA35VA - E1	MUZ-GA25VAH - E1 MUZ-GA35VAH - E1	MUZ-GA25VA - E2 MUZ-GA25VA - E3 MUZ-GA25VA - E4 MUZ-GA35VA - E2	MUZ-GA25VAH - E2 MUZ-GA25VAH - E3 MUZ-GA25VAH - E4 MUZ-GA35VAH - E2
①	Drain socket	1	–	1	–
②	Quick clean kit	1	1	–	–

3 SPECIFICATION

Outdoor model			MUZ-GA25VA MUZ-GA25VAH		MUZ-GA35VA MUZ-GA35VAH	
Function			Cooling	Heating	Cooling	Heating
Power supply			Single phase 230V,50Hz		Single phase 230V,50Hz	
Capacity	Capacity Rated frequency(Min.-Max.)	kW	2.5 (0.9-3.0)	3.2 (0.9-4.5)	3.5 (1.0-3.9)	4.0 (0.9-5.0)
	Dehumidification	ℓ /h	1.4	—	2.0	—
	Air flow ✻1	m³ /h	1,890		2,058	2,178
Electrical data	Power outlet	A	10		10	
	Running current ✻1	A	2.95	3.35	4.75	4.55
	Power input ✻1	W	607	727	1,047	1,022
	Power factor ✻1	%	89	94	96	98
	Starting current ✻1	A	3.6		5.0	
	Compressor motor current ✻1	A	2.71	3.11	4.44	4.20
	Fan motor current ✻1	A	0.24		0.31	0.35
Coefficient of performance(C.O.P) ✻1			3.91	4.21	3.24	3.79
Compressor	Model		KNB065FDTH		KNB073FDVH	
	Output	W	500		550	
	Winding resistance(at 20℃)	Ω	U-V 1.88 U-W 1.88 V-W 1.88		U-V 1.53 U-W 1.53 V-W 1.53	
Fan motor	Model		RA6V21-AB		RC0J50-AL	
	Winding resistance(at 20℃)	Ω	WHT-BLK 347 BLK-RED 281		WHT-BLK 37.5 BLK-RED 37.5 RED-WHT 37.5	
	Dimensions W×H×D	mm	800×550×285		800×550×285	
	Weight	kg	31		33	
Special remarks	Sound level ✻1	dB(A)	46		47	48
	Fan speed(High/Low, High/Med./Low)	rpm	810		810/750	880/810/650
	Fan speed regulator		1		2	3
	Refrigerant filling capacity(R410A)	kg	0.85		0.90	
	Refrigeration oil (Model)	cc	320 (NEO22)		320 (NEO22)	

NOTE : Test conditions are based on ISO 5151
Cooling : Indoor Dry-bulb temperature 27℃ Wet-bulb temperature 19℃
Outdoor Dry-bulb temperature 35℃ Wet-bulb temperature(24℃)
Heating : Indoor Dry-bulb temperature 20℃ Wet-bulb temperature 15℃
Outdoor Dry-bulb temperature 7℃ Wet-bulb temperature 6℃
Refrigerant piping length (one way): 5m
✻1 Measured under rated operating frequency

Specifications and rating conditions of main electric parts

Item \ Model	MUZ-GA25VA	MUZ-GA25VAH	MUZ-GA35VA	MUZ-GA35VAH
Current transformer (CT)	ETA19Z59BZ			
Current transformer (CT761, CT781)	ETQ19Z71AY			
Smoothing capacitor (C63A, C63B, C63C)	620µF 420V			
Diode module (DB61, DB65)	D25XB60			
Fuse (F61)	250V 20A			
Fuse (F71, F801)	250V 3.15A			
Fuse (F901 ※1)	—		250V 3.15A	
Defrost heater (H)	—	230V 130W	—	230V 130W
Intelligent power module (IPM)	PS21244-A-203			
Expansion valve coil (LEV)	—		CAM-MD12ME 12VDC	
Reactor (L61)	10A 23.0mH			
Current-detecting resistor (R61)	45mΩ 5W (1 element)			
Current-detecting resistor (R831)	25mΩ 5W			
Current-limiting resistor (R64A, R64B)	10Ω 5W			
Terminal block (TB1,TB2)	3P			
Relay (X63)	G5NB-1a			
Relay (X64)	G4A-1A-PS			
Relay (X66)	—	G5NB-1a	—	G5NB-1a
Relay (X69)	G5NB-1a(for E1/E2/E3)		—	
R.V. coil (21S4)	SHF-4-10W5		STF-01AJ503	
Solid state relay (SR61)	G3MC-202PL		—	
Solenoid valve coil (21R1)	FQ-208-RK (for E1/E2/E3 ※2)		—	
Heater protector (26H)	—	Open 45℃	—	Open 45℃
Outdoor fan motor thermal fuse	Open 152℃		—	

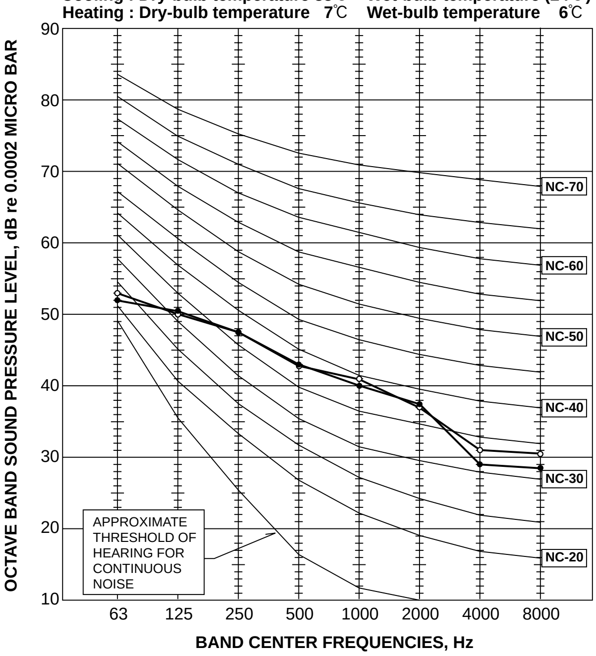
※1 Refer to Revision A.
※2 MUZ-GA25VA-E3(Serial No. ~6021350T)
MUZ-GA25VAH-E3(Serial No. ~7000000T)

4 NOISE CRITERIA CURVES

MUZ-GA25VA
MUZ-GA25VAH

FUNCTION	SPL(dB(A))	LINE
COOLING	46	●—●
HEATING	46	○—○

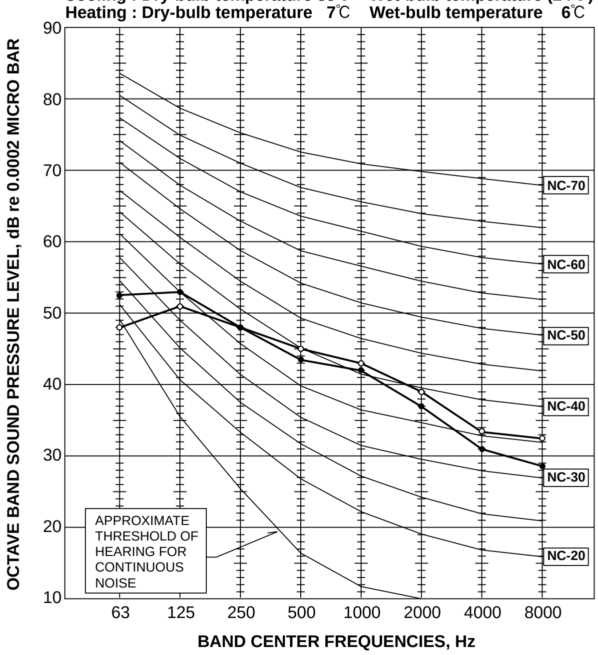
Test conditions
Cooling : Dry-bulb temperature 35℃ Wet-bulb temperature (24℃)
Heating : Dry-bulb temperature 7℃ Wet-bulb temperature 6℃

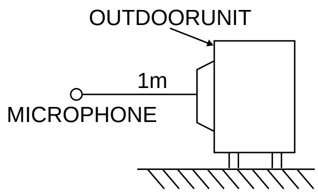


MUZ-GA35VA
MUZ-GA35VAH

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High Med.	COOLING	47	●—●
	HEATING	48	○—○

Test conditions
Cooling : Dry-bulb temperature 35℃ Wet-bulb temperature (24℃)
Heating : Dry-bulb temperature 7℃ Wet-bulb temperature 6℃

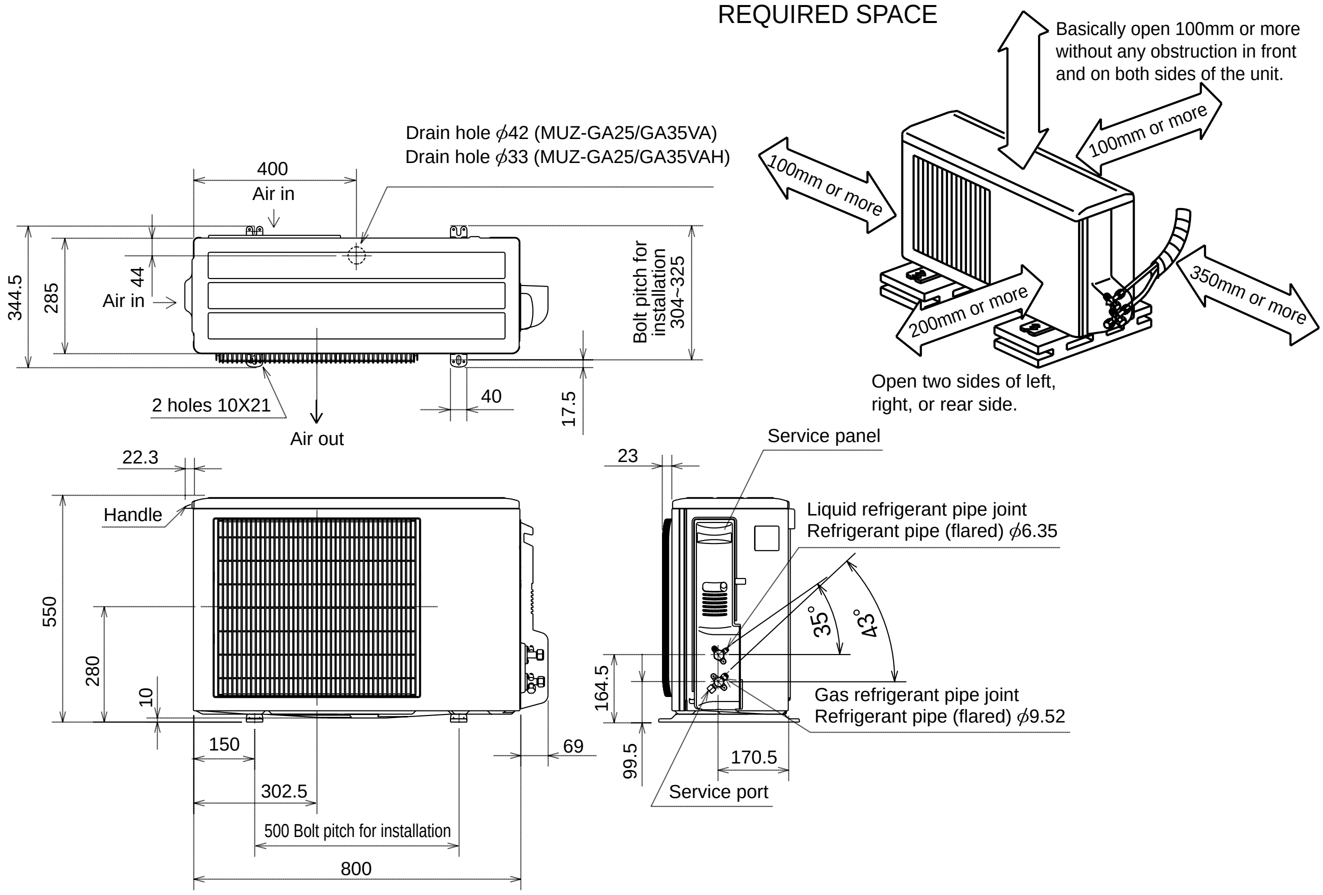




5 OUTLINES AND DIMENSIONS

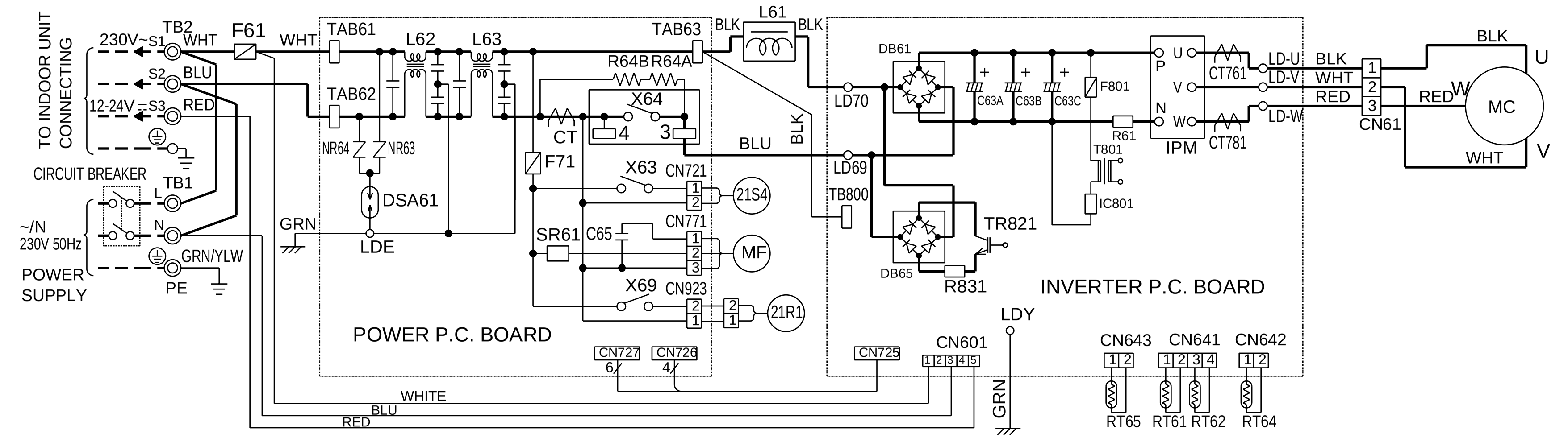
MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

Unit: mm



6 WIRING DIAGRAM

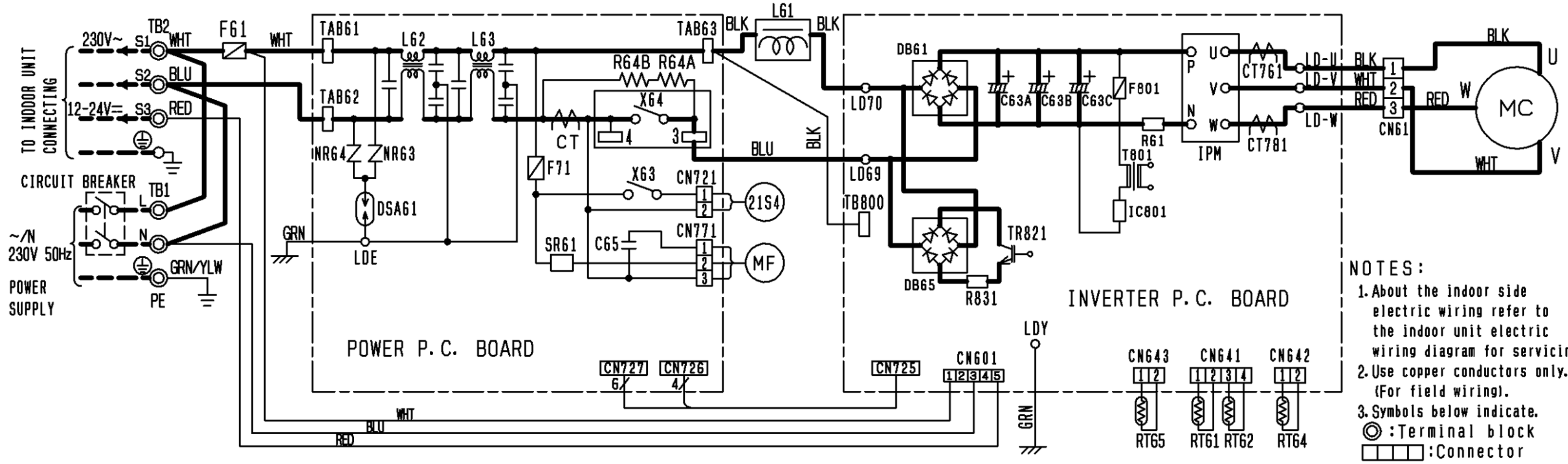
MUZ-GA25VA- E1
MUZ-GA25VA- E2
MUZ-GA25VA- E3 (Serial No. ~6021350T)



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R61,R831	CURRENT-DETECTING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	R64A,R64B	CURRENT-LIMITING RESISTOR
C65	OUTDOOR FAN CAPACITOR	MC	COMPRESSOR	SR61	SOLID STATE RELAY
DB61,DB65	DIODE MODULE	MF	OUTDOOR FAN MOTOR(INNER FUSE)	TB1,TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	NR63,NR64	VARISTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	RT61	DEFROST THERMISTOR	T801	TRANSFORMER
F71,F801	FUSE (T3.15AL250V)	RT62	DISCHARGE TEMPERATURE THERMISTOR	X63,X64,X69	RELAY
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMPERATURE THERMISTOR	21S4	R.V. COIL
IPM	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMPERATURE THERMISTOR	21R1	SOLENOID VALVE COIL

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2.Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□: Connector

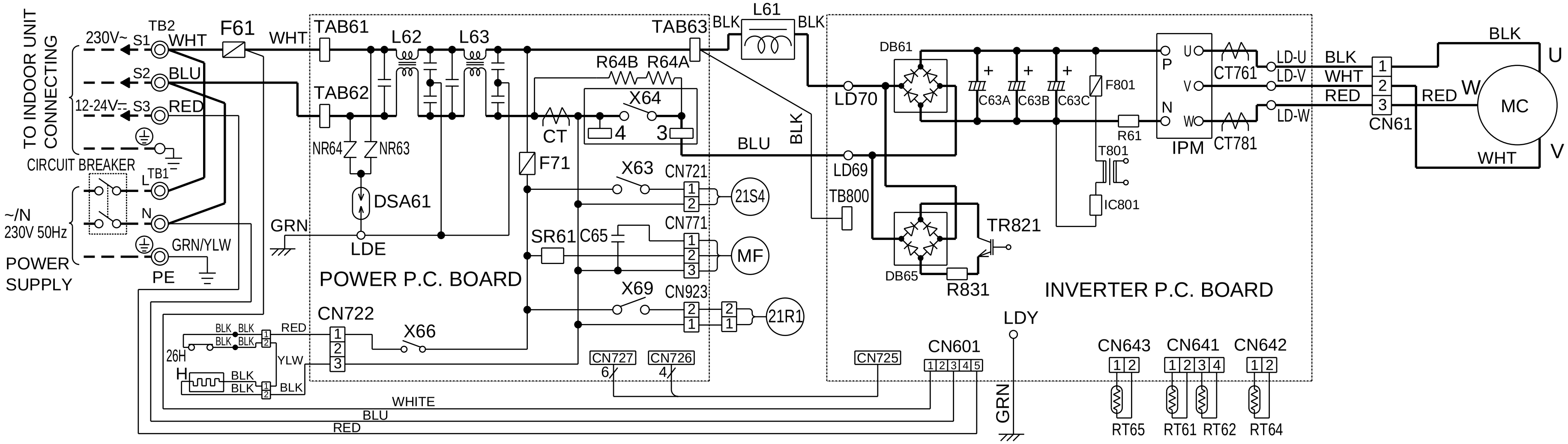
MUZ-GA25VA-E3 (Serial No. 6021351T~)
MUZ-GA25VA-E4



NOTES:
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◎ : Terminal block
□□□□ : Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT, CT761, CT781	CURRENT TRANSFORMER	L61	REACTOR	R61, R831	CURRENT-DETECTING RESISTOR
C63A, C63B, C63C	SMOOTHING CAPACITOR	L62, L63	CMC COIL	R64A, R64B	CURRENT-LIMITING RESISTOR
C65	FAN MOTOR CAPACITOR	MC	COMPRESSOR	SR61	SOLID STATE RELAY
DB61, DB65	DIODE MODULE	MF	FAN MOTOR (INNER FUSE)	TB1, TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	NR63, NR64	VARISTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	RT61	DEFROST THERMISTOR	T801	TRANSFORMER
F71, F801	FUSE (T3.15AL250V)	RT62	DISCHARGE TEMP. THERMISTOR	X63, X64	RELAY
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
IPM	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMP. THERMISTOR		

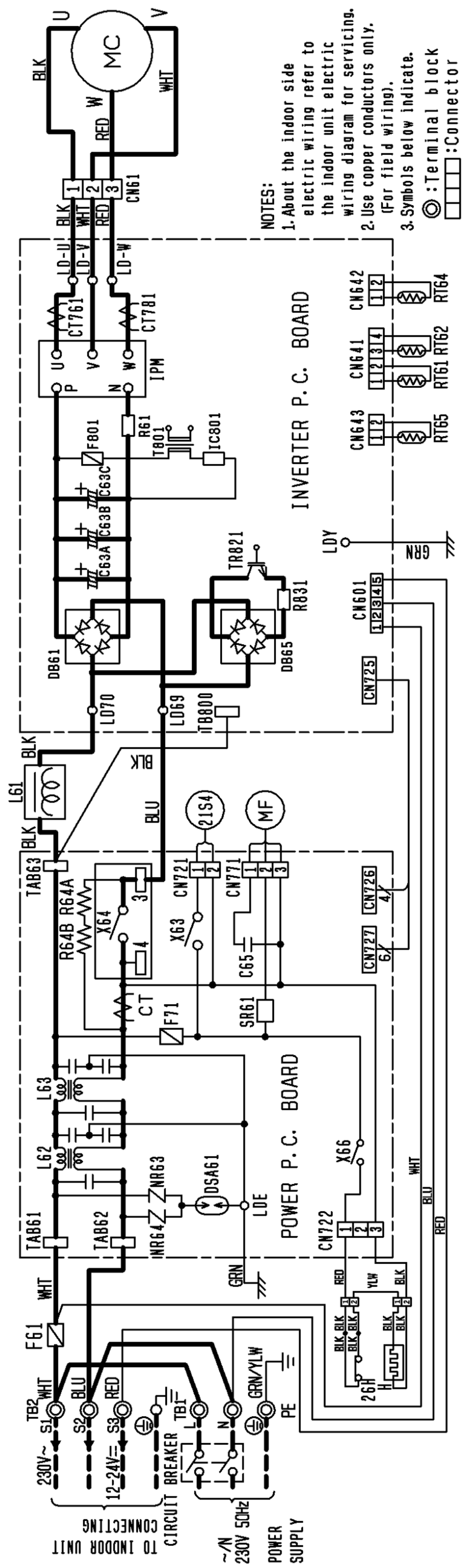
MUZ-GA25VAH-E1 MUZ-GA25VAH-E3 (Serial No. ~7000000T)
MUZ-GA25VAH-E2



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R64A,R64B	CURRENT-LIMITING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	SR61	SOLID STATE RELAY
C65	OUTDOOR FAN CAPACITOR	MC	COMPRESSOR	TB1,TB2	TERMINAL BLOCK
DB61,DB65	DIODE MODULE	MF	OUTDOOR FAN MOTOR(INNER FUSE)	TR821	SWITCHING POWER TRANSISTOR
DSA61	SURGE ABSORBER	NR63,NR64	VARISTOR	T801	TRANSFORMER
F61	FUSE (T20AL250V)	RT61	DEFROST THERMISTOR	X63,X64,X66,X69	RELAY
F71,F801	FUSE (T3.15AL250V)	RT62	DISCHARGE TEMPERATURE THERMISTOR	21S4	R.V. COIL
H	DEFROST HEATER	RT64	FIN TEMPERATURE THERMISTOR	21R1	SOLENOID VALVE COIL
IC801	INTELLIGENT POWER DEVICE	RT65	AMBIENT TEMPERATURE THERMISTOR	26H	HEATER PROTECTOR
IPM	INTELLIGENT POWER MODULE	R61,R831	CURRENT-DETECTING RESISTOR		

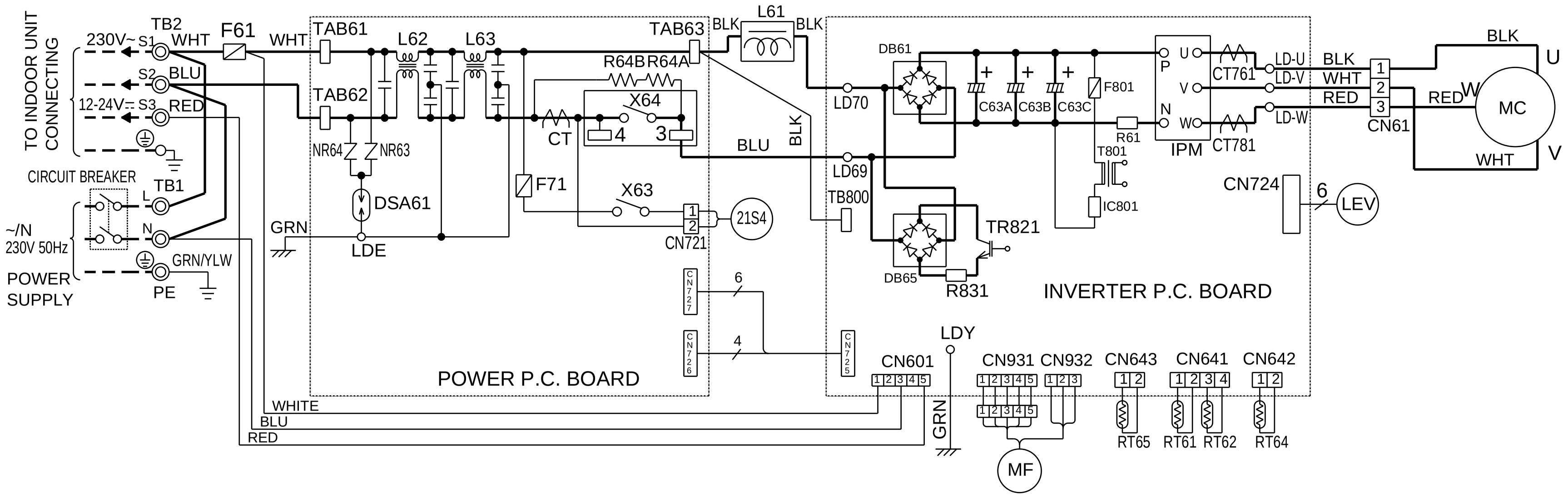
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MUZ-GA25VAH-E3 (Serial No. 7000001T~)
MUZ-GA25VAH-E4



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT, CT761, CT781	CURRENT TRANSFORMER	L62, L63	CMC COIL	SR61	SOLID STATE RELAY
C63A, C63B, C63C	SMOOTHING CAPACITOR	MC	COMPRESSOR	TB1, TB2	TERMINAL BLOCK
C65	FAN MOTOR CAPACITOR	MF	FAN MOTOR (INNER FUSE)	TR821	SWITCHING POWER TRANSISTOR
DB61, DB65	DIODE MODULE	NR63, NR64	VARISTOR	T801	TRANSFORMER
DSA61	SURGE ABSORBER	RT61	DEFROST THERMISTOR	X63, X64, X66	RELAY
F61	FUSE (T20AL250V)	RT62	DISCHARGE TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
F71, F801	FUSE (T3.15AL250V)	RT64	FIN TEMP. THERMISTOR	H	DEFROST HEATER
IC801	INTELLIGENT POWER DEVICE	RT65	AMBIENT TEMP. THERMISTOR	26H	HEATER PROTECTOR
IPM	INTELLIGENT POWER MODULE	R61, R831	CURRENT-DETECTING RESISTOR		
L61	REACTOR	R64A, R64B	CURRENT-LIMITING RESISTOR		

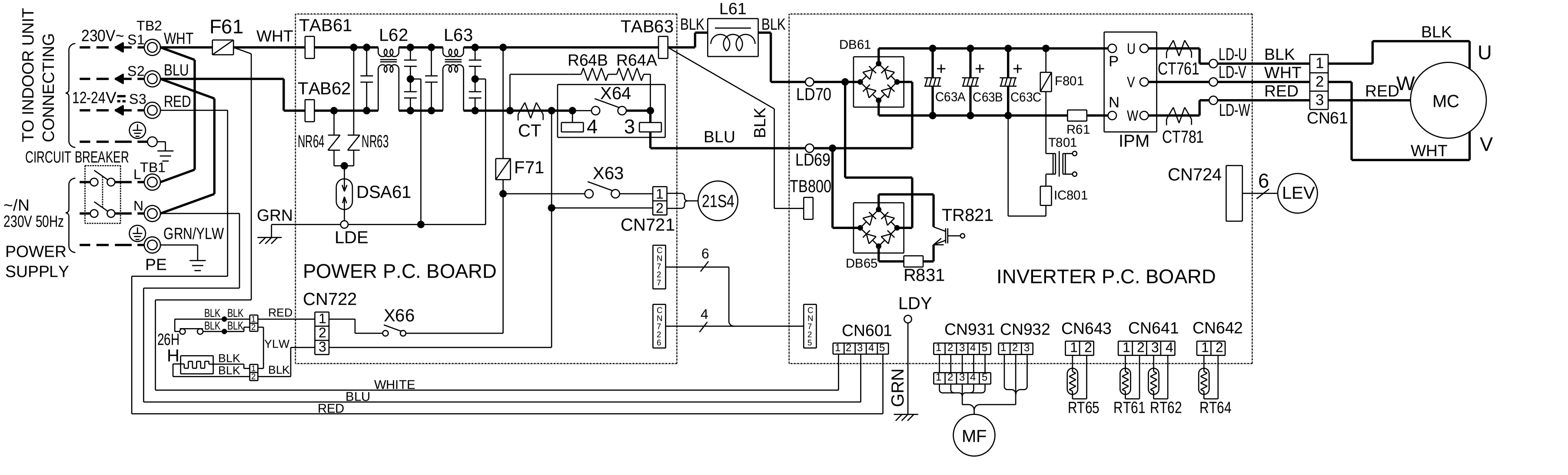
MUZ-GA35VA



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R61,R831	CURRENT-DETECTING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	R64A,R64B	CURRENT-LIMITING RESISTOR
DB61,DB65	DIODE MODULE	MC	COMPRESSOR	TB1,TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	NR63,NR64	VARISTOR	T801	TRANSFORMER
F71,F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	X63,X64	RELAY
IC801	INTELLIGENT POWER DEVICE	RT62	DISCHARGE TEMPERATURE THERMISTOR	21S4	R.V. COIL
IPM	INTELLIGENT POWER MODULE	RT64	FIN TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMPERATURE THERMISTOR		

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2.Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□: Connector

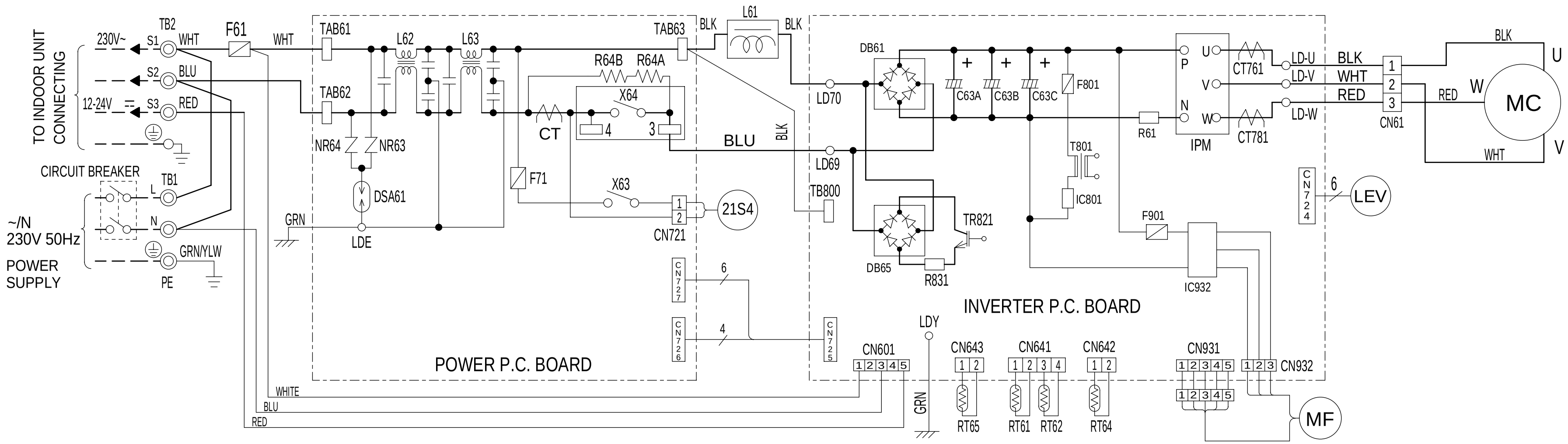
MUZ-GA35VAH



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R64A,R64B	CURRENT-LIMITING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	TB1,TB2	TERMINAL BLOCK
DB61,DB65	DIODE MODULE	MC	COMPRESSOR	TR821	SWITCHING POWER TRANSISTOR
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	T801	TRANSFORMER
F61	FUSE (T20AL250V)	NR63,NR64	VARISTOR	X63,X64,X66	RELAY
F71,F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	21S4	R.V. COIL
H	DEFROST HEATER	RT62	DISCHARGE TEMPERATURE THERMISTOR	26H	HEATER PROTECTOR
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMPERATURE THERMISTOR		
IPM	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	R61,R831	CURRENT-DETECTING RESISTOR		

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2.Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□: Connector

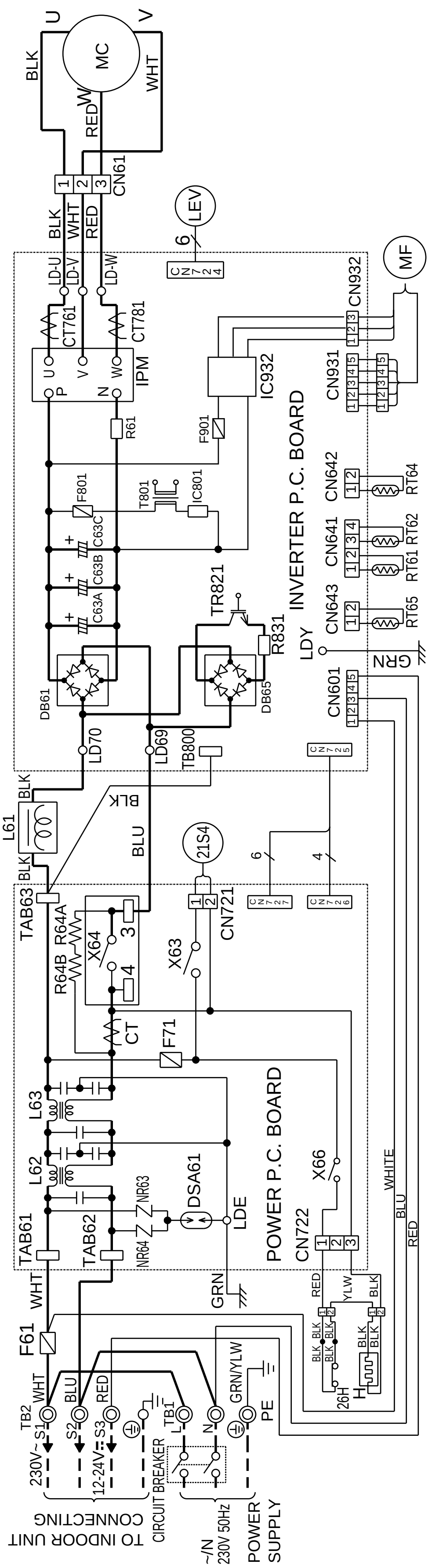
MUZ-GA35VA
※Alternative inverter P.C. board



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R61,R831	CURRENT-DETECTING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	R64A,R64B	CURRENT-LIMITING RESISTOR
DB61,DB65	DIODE MODULE	MC	COMPRESSOR	TB1,TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	NR63,NR64	VARISTOR	T801	TRANSFORMER
F71,F801,F901	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	X63,X64	RELAY
IC801	INTELLIGENT POWER DEVICE	RT62	DISCHARGE TEMPERATURE THERMISTOR	21S4	R.V. COIL
IPM,IC932	INTELLIGENT POWER MODULE	RT64	FIN TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMPERATURE THERMISTOR		

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2.Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□: Connector

MUZ-GA35VAH
※Alternative inverter P.C. board



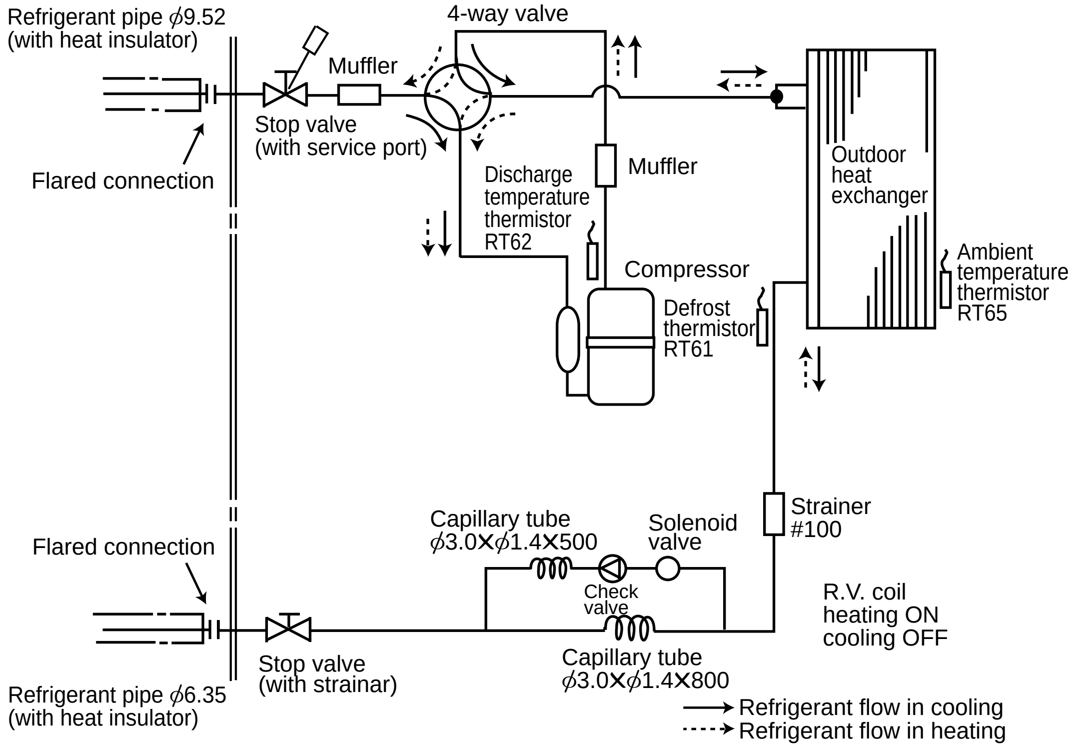
NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2.Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, ▭▭▭: Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT,CT761,CT781	CURRENT TRANSFORMER	L61	REACTOR	R64A,R64B	CURRENT-LIMITING RESISTOR
C63A,C63B,C63C	SMOOTHING CAPACITOR	L62,L63	CMC COIL	TB1,TB2	TERMINAL BLOCK
DB61,DB65	DIODE MODULE	MC	COMPRESSOR	TR821	SWITCHING POWER TRANSISTOR
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	T801	TRANSFORMER
F61	FUSE (T20AL250V)	NR63,NR64	VARISTOR	X63,X64,X66	RELAY
F71,F801,F901	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	21S4	R.V. COIL
H	DEFROST HEATER	RT62	DISCHARGE TEMPERATURE THERMISTOR	26H	HEATER PROTECTOR
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMPERATURE THERMISTOR		
IPM,IC932	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	R61,R831	CURRENT-DETECTING RESISTOR		

7 REFRIGERANT SYSTEM DIAGRAM

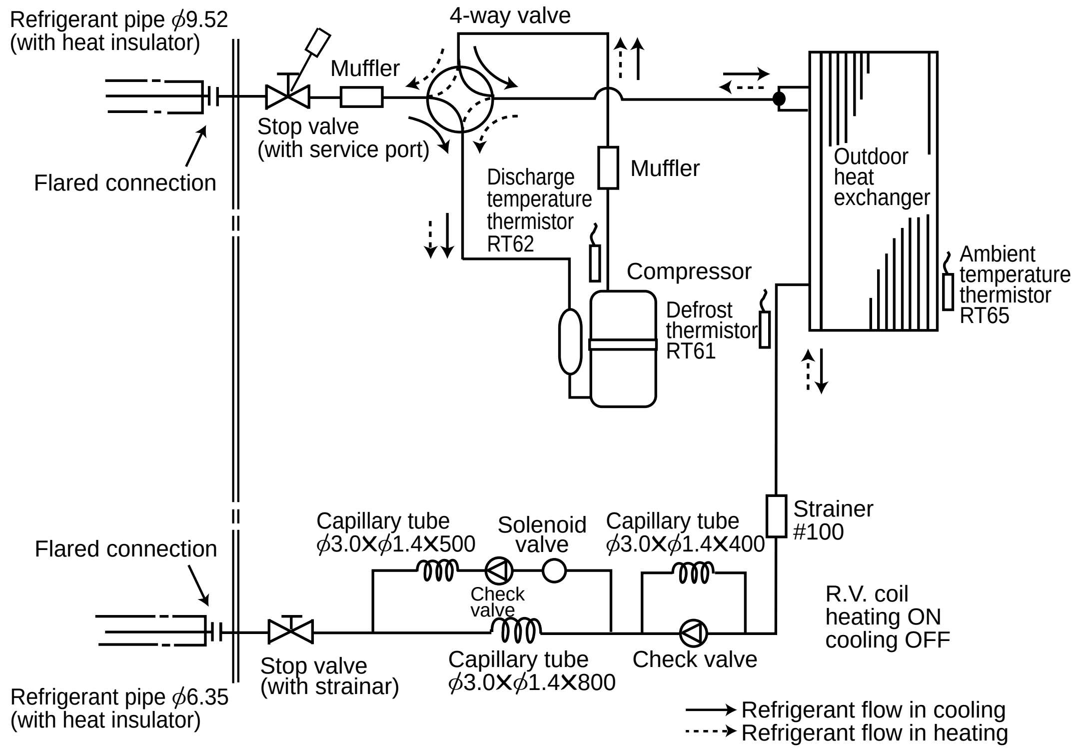
MUZ-GA25VA - E1 MUZ-GA25VA - E2
MUZ-GA25VAH - E1 MUZ-GA25VAH - E2

Unit:mm



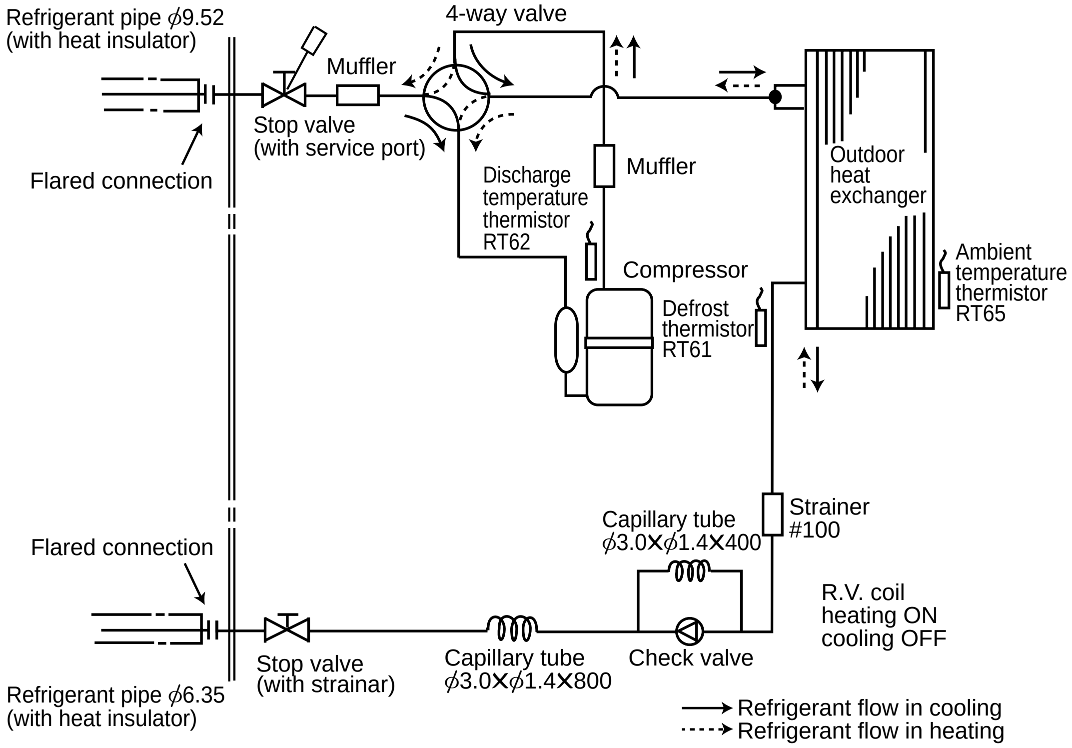
MUZ-GA25VA - E3
MUZ-GA25VAH - E3

Unit:mm



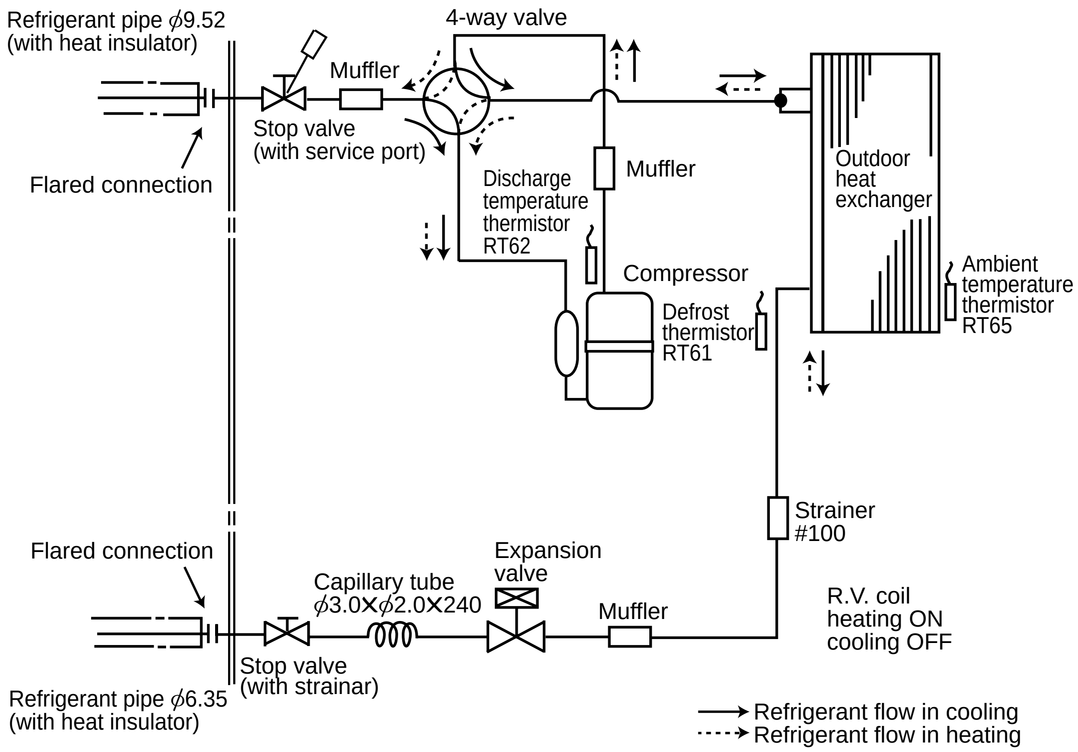
MUZ-GA25VA - E4
MUZ-GA25VAH - E4

Unit:mm



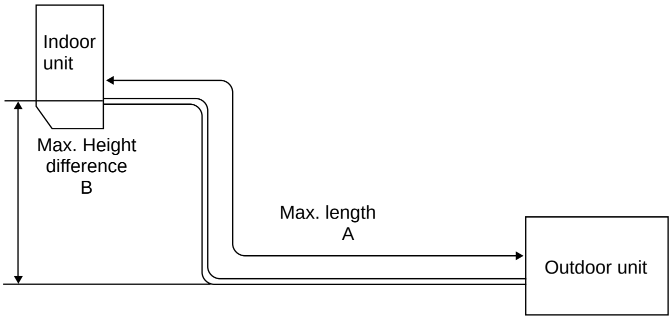
MUZ-GA35VA
MUZ-GA35VAH

Unit:mm



MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFFERENCE

Model	Refrigerant piping : m		Piping size O.D : mm	
	Max. length A	Max. Height difference B	Gas	Liquid
MUZ-GA25VA **MUZ-GA25VAH** **MUZ-GA35VA** **MUZ-GA35VAH**	20	12	9.52	6.35



ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)											
		5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	20m
MUZ-GA25VA **MUZ-GA25VAH**	850	0	0	0	90	120	150	180	210	240	270	300	450
MUZ-GA35VA **MUZ-GA35VAH**	900												

Calculation : Xg=30g/m ✕ (Refrigerant piping length (m)–5)

NOTE: Refrigerant piping exceeding 7m requires additional refrigerant charge according to the calculation.

8 PERFORMANCE CURVES

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

The standard data contained in these specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed, the following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

198 ~ 264V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

(3) MAIN READINGS

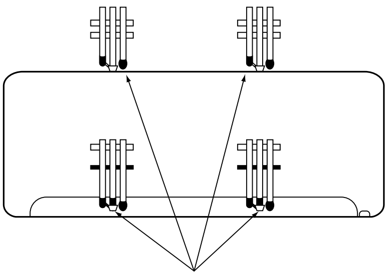
(1) Indoor intake air wet-bulb temperature :	°C WB	Cooling
(2) Indoor outlet air wet-bulb temperature :	°C WB	Cooling
(3) Outdoor intake air dry-bulb temperature :	°C DB	Cooling
(4) Total input:	W	Cooling
(5) Indoor intake air dry-bulb temperature :	°C DB	Heating
(6) Outdoor intake air wet-bulb temperature :	°C WB	Heating
(7) Total input :	W	Heating

Indoor air wet/dry-bulb temperature difference on the left side of the following chart shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

How to measure the indoor air wet-bulb / dry-bulb temperature difference

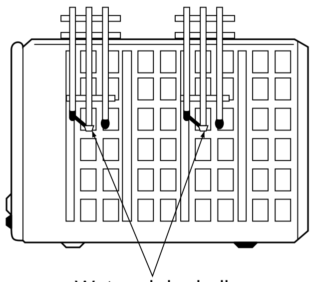
1. Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake.
   Cover the thermometers to prevent direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of room.
5. Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
6. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
7. 10 minutes later, measure temperature again and check that the temperature does not change.

INDOOR UNIT



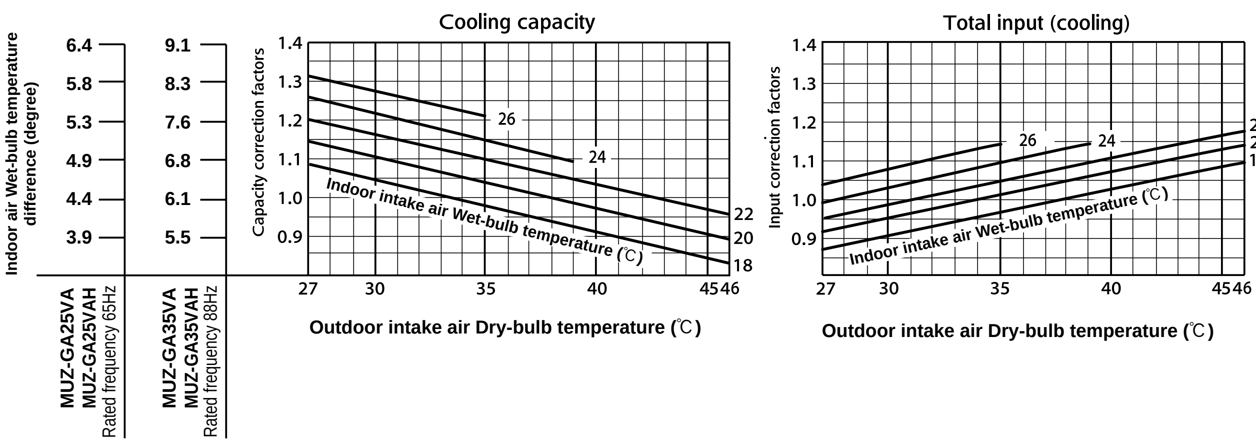
Wet and dry-bulb thermometers
FRONT VIEW

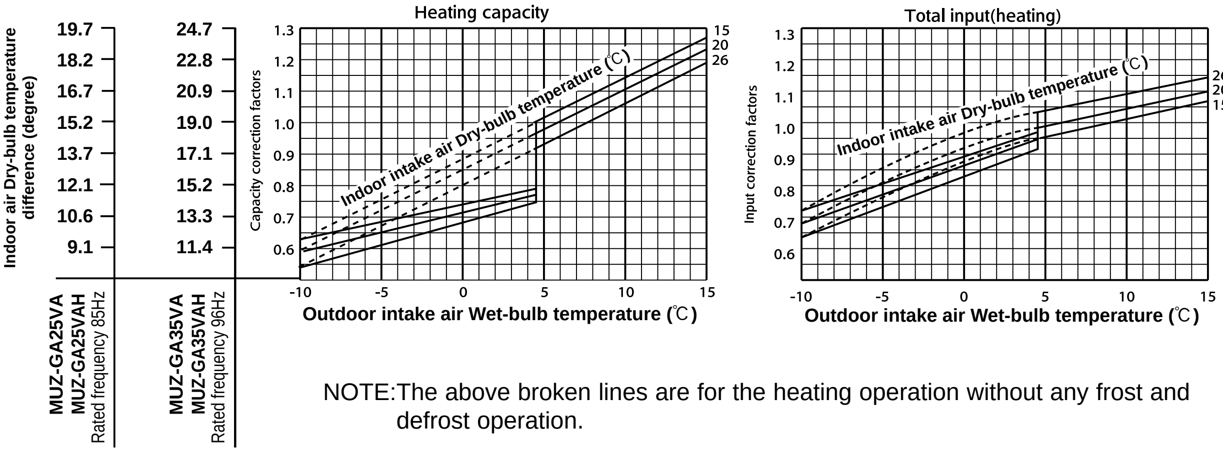
OUTDOOR UNIT



Wet and dry-bulb thermometers
BACK VIEW

8-1. Capacity and input curves

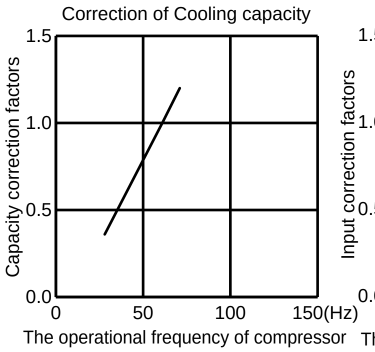




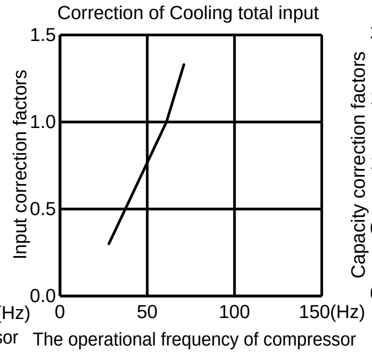
NOTE:The above broken lines are for the heating operation without any frost and defrost operation.

8-2. Capacity and input correction by operational frequency of compressor

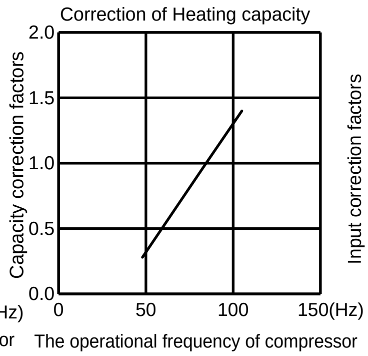
MUZ-GA25VA
MUZ-GA25VAH



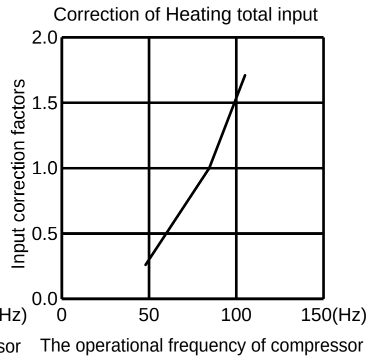
MUZ-GA25VA
MUZ-GA25VAH



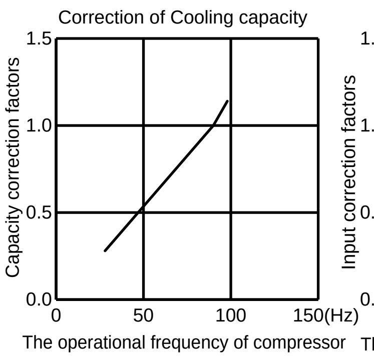
MUZ-GA25VA
MUZ-GA25VAH



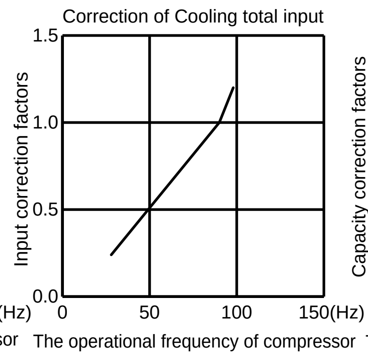
MUZ-GA25VA
MUZ-GA25VAH



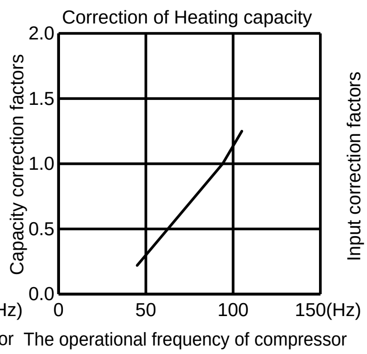
MUZ-GA35VA
MUZ-GA35VAH



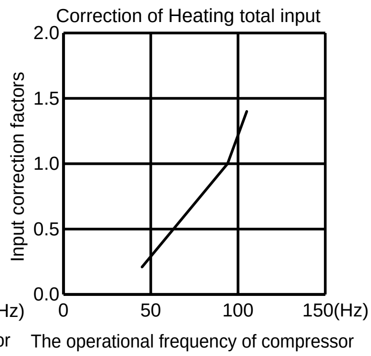
MUZ-GA35VA
MUZ-GA35VAH



MUZ-GA35VA
MUZ-GA35VAH



MUZ-GA35VA
MUZ-GA35VAH



8-3. Test run operation (How to operate fixed-frequency operation)

1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL : Press once, HEAT : Press twice).
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor operates at rated frequency in COOL mode or 58Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

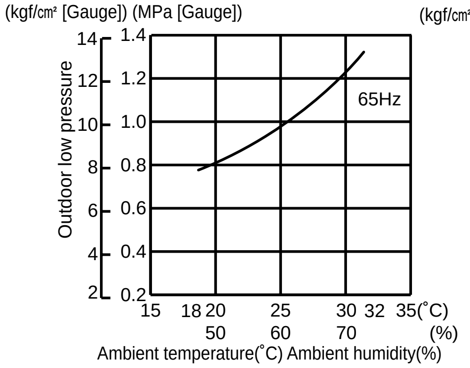
8-4. Outdoor low pressure and outdoor unit current

COOL operation

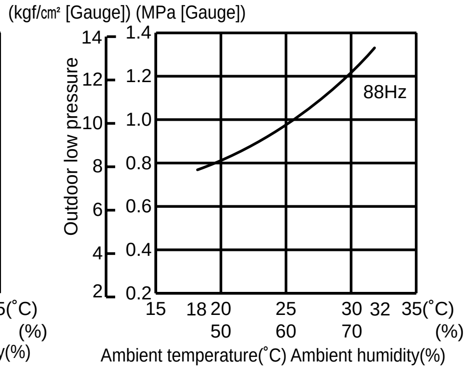
① Both indoor and outdoor unit are under the same temperature/humidity condition.
② Operation : TEST RUN OPERATION (refer to 8-3.)

Dry-bulb temperature(℃)	Relative humidity(%)
20	50
25	60
30	70

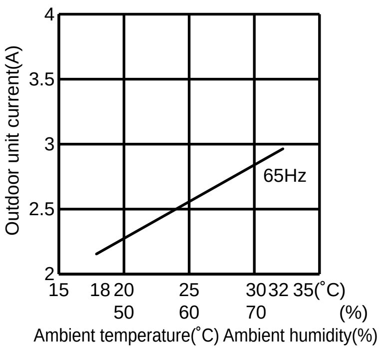
MUZ-GA25VA
MUZ-GA25VAH



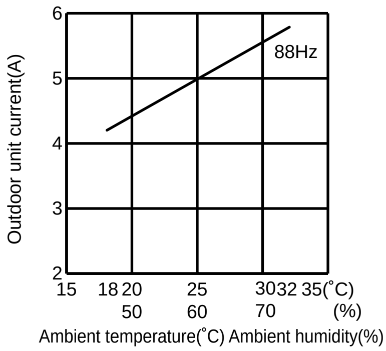
MUZ-GA35VA
MUZ-GA35VAH



MUZ-GA25VA
MUZ-GA25VAH



MUZ-GA35VA
MUZ-GA35VAH



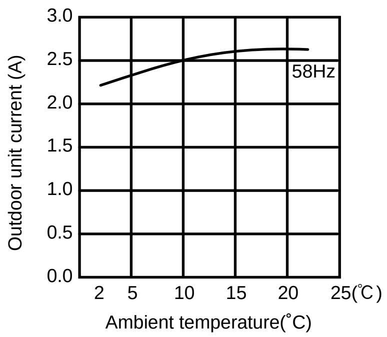
HEAT operation

① Condition :

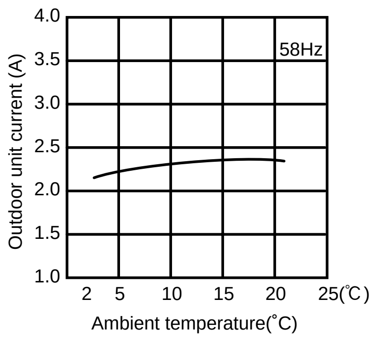
	Indoor	Outdoor			
Dry bulb temperature (°C)	20.0	2	7	15	20.0
Wet bulb temperature (°C)	14.5	1	6	12	14.5

② Operation : Test run operation (refer to 8-3.)

MUZ-GA25VA
MUZ-GA25VAH



MUZ-GA35VA
MUZ-GA35VAH



PERFORMANCE DATA COOL operation **Rated frequency 65Hz**

MUZ-GA25VA MUZ-GA25VAH

CAPACITY:2.5(kW) SHF:0.79 INPUT:640(W)

		OUTDOOR DB(℃)															
INDOOR DB(℃)	INDOOR WB(℃)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.94	1.79	0.61	512	2.81	1.72	0.61	538	2.70	1.65	0.61	563	2.60	1.59	0.61	589
21	20	3.06	1.50	0.49	538	2.94	1.44	0.49	570	2.85	1.40	0.49	582	2.75	1.35	0.49	608
22	18	2.94	1.91	0.65	512	2.81	1.83	0.65	538	2.70	1.76	0.65	563	2.60	1.69	0.65	589
22	20	3.06	1.62	0.53	538	2.94	1.56	0.53	570	2.85	1.51	0.53	582	2.75	1.46	0.53	608
22	22	3.19	1.31	0.41	557	3.08	1.26	0.41	592	3.00	1.23	0.41	608	2.88	1.18	0.41	634
23	18	2.94	2.03	0.69	512	2.81	1.94	0.69	538	2.70	1.86	0.69	563	2.60	1.79	0.69	589
23	20	3.06	1.75	0.57	538	2.94	1.67	0.57	570	2.85	1.62	0.57	582	2.75	1.57	0.57	608
23	22	3.19	1.43	0.45	557	3.08	1.38	0.45	592	3.00	1.35	0.45	608	2.88	1.29	0.45	634
24	18	2.94	2.14	0.73	512	2.81	2.05	0.73	538	2.70	1.97	0.73	563	2.60	1.90	0.73	589
24	20	3.06	1.87	0.61	538	2.94	1.79	0.61	570	2.85	1.74	0.61	582	2.75	1.68	0.61	608
24	22	3.19	1.56	0.49	557	3.08	1.51	0.49	592	3.00	1.47	0.49	608	2.88	1.41	0.49	634
24	24	3.35	1.24	0.37	582	3.23	1.19	0.37	614	3.15	1.17	0.37	634	3.05	1.13	0.37	666
25	18	2.94	2.26	0.77	512	2.81	2.17	0.77	538	2.70	2.08	0.77	563	2.60	2.00	0.77	589
25	20	3.06	1.99	0.65	538	2.94	1.91	0.65	570	2.85	1.85	0.65	582	2.75	1.79	0.65	608
25	22	3.19	1.69	0.53	557	3.08	1.63	0.53	592	3.00	1.59	0.53	608	2.88	1.52	0.53	634
25	24	3.35	1.37	0.41	582	3.23	1.32	0.41	614	3.15	1.29	0.41	634	3.05	1.25	0.41	666
26	18	2.94	2.38	0.81	512	2.81	2.28	0.81	538	2.70	2.19	0.81	563	2.60	2.11	0.81	589
26	20	3.06	2.11	0.69	538	2.94	2.03	0.69	570	2.85	1.97	0.69	582	2.75	1.90	0.69	608
26	22	3.19	1.82	0.57	557	3.08	1.75	0.57	592	3.00	1.71	0.57	608	2.88	1.64	0.57	634
26	24	3.35	1.51	0.45	582	3.23	1.45	0.45	614	3.15	1.42	0.45	634	3.05	1.37	0.45	666
26	26	3.45	1.14	0.33	614	3.35	1.11	0.33	646	3.30	1.09	0.33	666	3.20	1.06	0.33	685
27	18	2.94	2.50	0.85	512	2.81	2.39	0.85	538	2.70	2.30	0.85	563	2.60	2.21	0.85	589
27	20	3.06	2.24	0.73	538	2.94	2.14	0.73	570	2.85	2.08	0.73	582	2.75	2.01	0.73	608
27	22	3.19	1.94	0.61	557	3.08	1.88	0.61	592	3.00	1.83	0.61	608	2.88	1.75	0.61	634
27	24	3.35	1.64	0.49	582	3.23	1.58	0.49	614	3.15	1.54	0.49	634	3.05	1.49	0.49	666
27	26	3.45	1.28	0.37	614	3.35	1.24	0.37	646	3.30	1.22	0.37	666	3.20	1.18	0.37	685
28	18	2.94	2.61	0.89	512	2.81	2.50	0.89	538	2.70	2.40	0.89	563	2.60	2.31	0.89	589
28	20	3.06	2.36	0.77	538	2.94	2.26	0.77	570	2.85	2.19	0.77	582	2.75	2.12	0.77	608
28	22	3.19	2.07	0.65	557	3.08	2.00	0.65	592	3.00	1.95	0.65	608	2.88	1.87	0.65	634
28	24	3.35	1.78	0.53	582	3.23	1.71	0.53	614	3.15	1.67	0.53	634	3.05	1.62	0.53	666
28	26	3.45	1.41	0.41	614	3.35	1.37	0.41	646	3.30	1.35	0.41	666	3.20	1.31	0.41	685
29	18	2.94	2.73	0.93	512	2.81	2.62	0.93	538	2.70	2.51	0.93	563	2.60	2.42	0.93	589
29	20	3.06	2.48	0.81	538	2.94	2.38	0.81	570	2.85	2.31	0.81	582	2.75	2.23	0.81	608
29	22	3.19	2.20	0.69	557	3.08	2.12	0.69	592	3.00	2.07	0.69	608	2.88	1.98	0.69	634
29	24	3.35	1.91	0.57	582	3.23	1.84	0.57	614	3.15	1.80	0.57	634	3.05	1.74	0.57	666
29	26	3.45	1.55	0.45	614	3.35	1.51	0.45	646	3.30	1.49	0.45	666	3.20	1.44	0.45	685
30	18	2.94	2.85	0.97	512	2.81	2.73	0.97	538	2.70	2.62	0.97	563	2.60	2.52	0.97	589
30	20	3.06	2.60	0.85	538	2.94	2.50	0.85	570	2.85	2.42	0.85	582	2.75	2.34	0.85	608
30	22	3.19	2.33	0.73	557	3.08	2.24	0.73	592	3.00	2.19	0.73	608	2.88	2.10	0.73	634
30	24	3.35	2.04	0.61	582	3.23	1.97	0.61	614	3.15	1.92	0.61	634	3.05	1.86	0.61	666
30	26	3.45	1.69	0.49	614	3.35	1.64	0.49	646	3.30	1.62	0.49	666	3.20	1.57	0.49	685
31	18	2.94	2.97	1.01	512	2.81	2.84	1.01	538	2.70	2.73	1.01	563	2.60	2.63	1.01	589
31	20	3.06	2.73	0.89	538	2.94	2.61	0.89	570	2.85	2.54	0.89	582	2.75	2.45	0.89	608
31	22	3.19	2.45	0.77	557	3.08	2.37	0.77	592	3.00	2.31	0.77	608	2.88	2.21	0.77	634
31	24	3.35	2.18	0.65	582	3.23	2.10	0.65	614	3.15	2.05	0.65	634	3.05	1.98	0.65	666
31	26	3.45	1.83	0.53	614	3.35	1.78	0.53	646	3.30	1.75	0.53	666	3.20	1.70	0.53	685
32	18	2.94	3.08	1.05	512	2.81	2.95	1.05	538	2.70	2.84	1.05	563	2.60	2.73	1.05	589
32	20	3.06	2.85	0.93	538	2.94	2.73	0.93	570	2.85	2.65	0.93	582	2.75	2.56	0.93	608
32	22	3.19	2.58	0.81	557	3.08	2.49	0.81	592	3.00	2.43	0.81	608	2.88	2.33	0.81	634
32	24	3.35	2.31	0.69	582	3.23	2.23	0.69	614	3.15	2.17	0.69	634	3.05	2.10	0.69	666
32	26	3.45	1.97	0.57	614	3.35	1.91	0.57	646	3.30	1.88	0.57	666	3.20	1.82	0.57	685

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation **Rated frequency 65Hz**

MUZ-GA25VA MUZ-GA25VAH

CAPACITY:2.5(kW) SHF:0.79 INPUT:640(W)

		OUTDOOR DB(℃)											
INDOOR DB (℃)	INDOOR WB (℃)	35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.45	1.49	0.61	627	2.25	1.37	0.61	666	2.08	1.27	0.61	691
21	20	2.58	1.26	0.49	653	2.40	1.18	0.49	685	2.23	1.09	0.49	723
22	18	2.45	1.59	0.65	627	2.25	1.46	0.65	666	2.08	1.35	0.65	691
22	20	2.58	1.36	0.53	653	2.40	1.27	0.53	685	2.23	1.18	0.53	723
22	22	2.73	1.12	0.41	678	2.55	1.05	0.41	717	2.38	0.97	0.41	742
23	18	2.45	1.69	0.69	627	2.25	1.55	0.69	666	2.08	1.43	0.69	691
23	20	2.58	1.47	0.57	653	2.40	1.37	0.57	685	2.23	1.27	0.57	723
23	22	2.73	1.23	0.45	678	2.55	1.15	0.45	717	2.38	1.07	0.45	742
24	18	2.45	1.79	0.73	627	2.25	1.64	0.73	666	2.08	1.51	0.73	691
24	20	2.58	1.57	0.61	653	2.40	1.46	0.61	685	2.23	1.36	0.61	723
24	22	2.73	1.34	0.49	678	2.55	1.25	0.49	717	2.38	1.16	0.49	742
24	24	2.88	1.06	0.37	704	2.70	1.00	0.37	736	2.55	0.94	0.37	768
25	18	2.45	1.89	0.77	627	2.25	1.73	0.77	666	2.08	1.60	0.77	691
25	20	2.58	1.67	0.65	653	2.40	1.56	0.65	685	2.23	1.45	0.65	723
25	22	2.73	1.44	0.53	678	2.55	1.35	0.53	717	2.38	1.26	0.53	742
25	24	2.88	1.18	0.41	704	2.70	1.11	0.41	736	2.55	1.05	0.41	768
26	18	2.45	1.98	0.81	627	2.25	1.82	0.81	666	2.08	1.68	0.81	691
26	20	2.58	1.78	0.69	653	2.40	1.66	0.69	685	2.23	1.54	0.69	723
26	22	2.73	1.55	0.57	678	2.55	1.45	0.57	717	2.38	1.35	0.57	742
26	24	2.88	1.29	0.45	704	2.70	1.22	0.45	736	2.55	1.15	0.45	768
26	26	3.03	1.00	0.33	730	2.85	0.94	0.33	762	2.68	0.88	0.33	794
27	18	2.45	2.08	0.85	627	2.25	1.91	0.85	666	2.08	1.76	0.85	691
27	20	2.58	1.88	0.73	653	2.40	1.75	0.73	685	2.23	1.62	0.73	723
27	22	2.73	1.66	0.61	678	2.55	1.56	0.61	717	2.38	1.45	0.61	742
27	24	2.88	1.41	0.49	704	2.70	1.32	0.49	736	2.55	1.25	0.49	768
27	26	3.03	1.12	0.37	730	2.85	1.05	0.37	762	2.68	0.99	0.37	794
28	18	2.45	2.18	0.89	627	2.25	2.00	0.89	666	2.08	1.85	0.89	691
28	20	2.58	1.98	0.77	653	2.40	1.85	0.77	685	2.23	1.71	0.77	723
28	22	2.73	1.77	0.65	678	2.55	1.66	0.65	717	2.38	1.54	0.65	742
28	24	2.88	1.52	0.53	704	2.70	1.43	0.53	736	2.55	1.35	0.53	768
28	26	3.03	1.24	0.41	730	2.85	1.17	0.41	762	2.68	1.10	0.41	794
29	18	2.45	2.28	0.93	627	2.25	2.09	0.93	666	2.08	1.93	0.93	691
29	20	2.58	2.09	0.81	653	2.40	1.94	0.81	685	2.23	1.80	0.81	723
29	22	2.73	1.88	0.69	678	2.55	1.76	0.69	717	2.38	1.64	0.69	742
29	24	2.88	1.64	0.57	704	2.70	1.54	0.57	736	2.55	1.45	0.57	768
29	26	3.03	1.36	0.45	730	2.85	1.28	0.45	762	2.68	1.20	0.45	794
30	18	2.45	2.38	0.97	627	2.25	2.18	0.97	666	2.08	2.01	0.97	691
30	20	2.58	2.19	0.85	653	2.40	2.04	0.85	685	2.23	1.89	0.85	723
30	22	2.73	1.99	0.73	678	2.55	1.86	0.73	717	2.38	1.73	0.73	742
30	24	2.88	1.75	0.61	704	2.70	1.65	0.61	736	2.55	1.56	0.61	768
30	26	3.03	1.48	0.49	730	2.85	1.40	0.49	762	2.68	1.31	0.49	794
31	18	2.45	2.47	1.01	627	2.25	2.27	1.01	666	2.08	2.10	1.01	691
31	20	2.58	2.29	0.89	653	2.40	2.14	0.89	685	2.23	1.98	0.89	723
31	22	2.73	2.10	0.77	678	2.55	1.96	0.77	717	2.38	1.83	0.77	742
31	24	2.88	1.87	0.65	704	2.70	1.76	0.65	736	2.55	1.66	0.65	768
31	26	3.03	1.60	0.53	730	2.85	1.51	0.53	762	2.68	1.42	0.53	794
32	18	2.45	2.57	1.05	627	2.25	2.36	1.05	666	2.08	2.18	1.05	691
32	20	2.58	2.39	0.93	653	2.40	2.23	0.93	685	2.23	2.07	0.93	723
32	22	2.73	2.21	0.81	678	2.55	2.07	0.81	717	2.38	1.92	0.81	742
32	24	2.88	1.98	0.69	704	2.70	1.86	0.69	736	2.55	1.76	0.69	768
32	26	3.03	1.72	0.57	730	2.85	1.62	0.57	762	2.68	1.52	0.57	794

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation **Rated frequency 88Hz**

MUZ-GA35VA MUZ-GA35VAH

CAPACITY:3.5(kW) SHF:0.76 INPUT:1080(W)

		OUTDOOR DB(℃)															
INDOOR DB(℃)	INDOOR WB(℃)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.11	2.39	0.58	864	3.94	2.28	0.58	907	3.78	2.19	0.58	950	3.64	2.11	0.58	994
21	20	4.29	1.97	0.46	907	4.11	1.89	0.46	961	3.99	1.84	0.46	983	3.85	1.77	0.46	1026
22	18	4.11	2.55	0.62	864	3.94	2.44	0.62	907	3.78	2.34	0.62	950	3.64	2.26	0.62	994
22	20	4.29	2.14	0.50	907	4.11	2.06	0.50	961	3.99	2.00	0.50	983	3.85	1.93	0.50	1026
22	22	4.46	1.70	0.38	940	4.31	1.64	0.38	999	4.20	1.60	0.38	1026	4.03	1.53	0.38	1069
23	18	4.11	2.71	0.66	864	3.94	2.60	0.66	907	3.78	2.49	0.66	950	3.64	2.40	0.66	994
23	20	4.29	2.32	0.54	907	4.11	2.22	0.54	961	3.99	2.15	0.54	983	3.85	2.08	0.54	1026
23	22	4.46	1.87	0.42	940	4.31	1.81	0.42	999	4.20	1.76	0.42	1026	4.03	1.69	0.42	1069
24	18	4.11	2.88	0.70	864	3.94	2.76	0.70	907	3.78	2.65	0.70	950	3.64	2.55	0.70	994
24	20	4.29	2.49	0.58	907	4.11	2.39	0.58	961	3.99	2.31	0.58	983	3.85	2.23	0.58	1026
24	22	4.46	2.05	0.46	940	4.31	1.98	0.46	999	4.20	1.93	0.46	1026	4.03	1.85	0.46	1069
24	24	4.69	1.59	0.34	983	4.52	1.54	0.34	1037	4.41	1.50	0.34	1069	4.27	1.45	0.34	1123
25	18	4.11	3.04	0.74	864	3.94	2.91	0.74	907	3.78	2.80	0.74	950	3.64	2.69	0.74	994
25	20	4.29	2.66	0.62	907	4.11	2.55	0.62	961	3.99	2.47	0.62	983	3.85	2.39	0.62	1026
25	22	4.46	2.23	0.50	940	4.31	2.15	0.50	999	4.20	2.10	0.50	1026	4.03	2.01	0.50	1069
25	24	4.69	1.78	0.38	983	4.52	1.72	0.38	1037	4.41	1.68	0.38	1069	4.27	1.62	0.38	1123
26	18	4.11	3.21	0.78	864	3.94	3.07	0.78	907	3.78	2.95	0.78	950	3.64	2.84	0.78	994
26	20	4.29	2.83	0.66	907	4.11	2.71	0.66	961	3.99	2.63	0.66	983	3.85	2.54	0.66	1026
26	22	4.46	2.41	0.54	940	4.31	2.32	0.54	999	4.20	2.27	0.54	1026	4.03	2.17	0.54	1069
26	24	4.69	1.97	0.42	983	4.52	1.90	0.42	1037	4.41	1.85	0.42	1069	4.27	1.79	0.42	1123
26	26	4.83	1.45	0.30	1037	4.69	1.41	0.30	1091	4.62	1.39	0.30	1123	4.48	1.34	0.30	1156
27	18	4.11	3.37	0.82	864	3.94	3.23	0.82	907	3.78	3.10	0.82	950	3.64	2.98	0.82	994
27	20	4.29	3.00	0.70	907	4.11	2.88	0.70	961	3.99	2.79	0.70	983	3.85	2.70	0.70	1026
27	22	4.46	2.59	0.58	940	4.31	2.50	0.58	999	4.20	2.44	0.58	1026	4.03	2.33	0.58	1069
27	24	4.69	2.16	0.46	983	4.52	2.08	0.46	1037	4.41	2.03	0.46	1069	4.27	1.96	0.46	1123
27	26	4.83	1.64	0.34	1037	4.69	1.59	0.34	1091	4.62	1.57	0.34	1123	4.48	1.52	0.34	1156
28	18	4.11	3.54	0.86	864	3.94	3.39	0.86	907	3.78	3.25	0.86	950	3.64	3.13	0.86	994
28	20	4.29	3.17	0.74	907	4.11	3.04	0.74	961	3.99	2.95	0.74	983	3.85	2.85	0.74	1026
28	22	4.46	2.77	0.62	940	4.31	2.67	0.62	999	4.20	2.60	0.62	1026	4.03	2.50	0.62	1069
28	24	4.69	2.35	0.50	983	4.52	2.26	0.50	1037	4.41	2.21	0.50	1069	4.27	2.14	0.50	1123
28	26	4.83	1.84	0.38	1037	4.69	1.78	0.38	1091	4.62	1.76	0.38	1123	4.48	1.70	0.38	1156
29	18	4.11	3.70	0.90	864	3.94	3.54	0.90	907	3.78	3.40	0.90	950	3.64	3.28	0.90	994
29	20	4.29	3.34	0.78	907	4.11	3.21	0.78	961	3.99	3.11	0.78	983	3.85	3.00	0.78	1026
29	22	4.46	2.95	0.66	940	4.31	2.84	0.66	999	4.20	2.77	0.66	1026	4.03	2.66	0.66	1069
29	24	4.69	2.53	0.54	983	4.52	2.44	0.54	1037	4.41	2.38	0.54	1069	4.27	2.31	0.54	1123
29	26	4.83	2.03	0.42	1037	4.69	1.97	0.42	1091	4.62	1.94	0.42	1123	4.48	1.88	0.42	1156
30	18	4.11	3.87	0.94	864	3.94	3.70	0.94	907	3.78	3.55	0.94	950	3.64	3.42	0.94	994
30	20	4.29	3.52	0.82	907	4.11	3.37	0.82	961	3.99	3.27	0.82	983	3.85	3.16	0.82	1026
30	22	4.46	3.12	0.70	940	4.31	3.01	0.70	999	4.20	2.94	0.70	1026	4.03	2.82	0.70	1069
30	24	4.69	2.72	0.58	983	4.52	2.62	0.58	1037	4.41	2.56	0.58	1069	4.27	2.48	0.58	1123
30	26	4.83	2.22	0.46	1037	4.69	2.16	0.46	1091	4.62	2.13	0.46	1123	4.48	2.06	0.46	1156
31	18	4.11	4.03	0.98	864	3.94	3.86	0.98	907	3.78	3.70	0.98	950	3.64	3.57	0.98	994
31	20	4.29	3.69	0.86	907	4.11	3.54	0.86	961	3.99	3.43	0.86	983	3.85	3.31	0.86	1026
31	22	4.46	3.30	0.74	940	4.31	3.19	0.74	999	4.20	3.11	0.74	1026	4.03	2.98	0.74	1069
31	24	4.69	2.91	0.62	983	4.52	2.80	0.62	1037	4.41	2.73	0.62	1069	4.27	2.65	0.62	1123
31	26	4.83	2.42	0.50	1037	4.69	2.35	0.50	1091	4.62	2.31	0.50	1123	4.48	2.24	0.50	1156
32	18	4.11	4.19	1.02	864	3.94	4.02	1.02	907	3.78	3.86	1.02	950	3.64	3.71	1.02	994
32	20	4.29	3.86	0.90	907	4.11	3.70	0.90	961	3.99	3.59	0.90	983	3.85	3.47	0.90	1026
32	22	4.46	3.48	0.78	940	4.31	3.36	0.78	999	4.20	3.28	0.78	1026	4.03	3.14	0.78	1069
32	24	4.69	3.10	0.66	983	4.52	2.98	0.66	1037	4.41	2.91	0.66	1069	4.27	2.82	0.66	1123
32	26	4.83	2.61	0.54	1037	4.69	2.53	0.54	1091	4.62	2.49	0.54	1123	4.48	2.42	0.54	1156

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 88Hz

MUZ-GA35VA MUZ-GA35VAH

CAPACITY:3.5(kW) SHF:0.76 INPUT:1080(W)

		OUTDOOR DB(℃)											
INDOOR	INDOOR	35				40				46			
DB (℃)	WB (℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.43	1.99	0.58	1058	3.15	1.83	0.58	1123	2.91	1.68	0.58	1166
21	20	3.61	1.66	0.46	1102	3.36	1.55	0.46	1156	3.12	1.43	0.46	1220
22	18	3.43	2.13	0.62	1058	3.15	1.95	0.62	1123	2.91	1.80	0.62	1166
22	20	3.61	1.80	0.50	1102	3.36	1.68	0.50	1156	3.12	1.56	0.50	1220
22	22	3.82	1.45	0.38	1145	3.57	1.36	0.38	1210	3.33	1.26	0.38	1253
23	18	3.43	2.26	0.66	1058	3.15	2.08	0.66	1123	2.91	1.92	0.66	1166
23	20	3.61	1.95	0.54	1102	3.36	1.81	0.54	1156	3.12	1.68	0.54	1220
23	22	3.82	1.60	0.42	1145	3.57	1.50	0.42	1210	3.33	1.40	0.42	1253
24	18	3.43	2.40	0.70	1058	3.15	2.21	0.70	1123	2.91	2.03	0.70	1166
24	20	3.61	2.09	0.58	1102	3.36	1.95	0.58	1156	3.12	1.81	0.58	1220
24	22	3.82	1.75	0.46	1145	3.57	1.64	0.46	1210	3.33	1.53	0.46	1253
24	24	4.03	1.37	0.34	1188	3.78	1.29	0.34	1242	3.57	1.21	0.34	1296
25	18	3.43	2.54	0.74	1058	3.15	2.33	0.74	1123	2.91	2.15	0.74	1166
25	20	3.61	2.24	0.62	1102	3.36	2.08	0.62	1156	3.12	1.93	0.62	1220
25	22	3.82	1.91	0.50	1145	3.57	1.79	0.50	1210	3.33	1.66	0.50	1253
25	24	4.03	1.53	0.38	1188	3.78	1.44	0.38	1242	3.57	1.36	0.38	1296
26	18	3.43	2.68	0.78	1058	3.15	2.46	0.78	1123	2.91	2.27	0.78	1166
26	20	3.61	2.38	0.66	1102	3.36	2.22	0.66	1156	3.12	2.06	0.66	1220
26	22	3.82	2.06	0.54	1145	3.57	1.93	0.54	1210	3.33	1.80	0.54	1253
26	24	4.03	1.69	0.42	1188	3.78	1.59	0.42	1242	3.57	1.50	0.42	1296
26	26	4.24	1.27	0.30	1231	3.99	1.20	0.30	1285	3.75	1.12	0.30	1339
27	18	3.43	2.81	0.82	1058	3.15	2.58	0.82	1123	2.91	2.38	0.82	1166
27	20	3.61	2.52	0.70	1102	3.36	2.35	0.70	1156	3.12	2.18	0.70	1220
27	22	3.82	2.21	0.58	1145	3.57	2.07	0.58	1210	3.33	1.93	0.58	1253
27	24	4.03	1.85	0.46	1188	3.78	1.74	0.46	1242	3.57	1.64	0.46	1296
27	26	4.24	1.44	0.34	1231	3.99	1.36	0.34	1285	3.75	1.27	0.34	1339
28	18	3.43	2.95	0.86	1058	3.15	2.71	0.86	1123	2.91	2.50	0.86	1166
28	20	3.61	2.67	0.74	1102	3.36	2.49	0.74	1156	3.12	2.31	0.74	1220
28	22	3.82	2.37	0.62	1145	3.57	2.21	0.62	1210	3.33	2.06	0.62	1253
28	24	4.03	2.01	0.50	1188	3.78	1.89	0.50	1242	3.57	1.79	0.50	1296
28	26	4.24	1.61	0.38	1231	3.99	1.52	0.38	1285	3.75	1.42	0.38	1339
29	18	3.43	3.09	0.90	1058	3.15	2.84	0.90	1123	2.91	2.61	0.90	1166
29	20	3.61	2.81	0.78	1102	3.36	2.62	0.78	1156	3.12	2.43	0.78	1220
29	22	3.82	2.52	0.66	1145	3.57	2.36	0.66	1210	3.33	2.19	0.66	1253
29	24	4.03	2.17	0.54	1188	3.78	2.04	0.54	1242	3.57	1.93	0.54	1296
29	26	4.24	1.78	0.42	1231	3.99	1.68	0.42	1285	3.75	1.57	0.42	1339
30	18	3.43	3.22	0.94	1058	3.15	2.96	0.94	1123	2.91	2.73	0.94	1166
30	20	3.61	2.96	0.82	1102	3.36	2.76	0.82	1156	3.12	2.55	0.82	1220
30	22	3.82	2.67	0.70	1145	3.57	2.50	0.70	1210	3.33	2.33	0.70	1253
30	24	4.03	2.33	0.58	1188	3.78	2.19	0.58	1242	3.57	2.07	0.58	1296
30	26	4.24	1.95	0.46	1231	3.99	1.84	0.46	1285	3.75	1.72	0.46	1339
31	18	3.43	3.36	0.98	1058	3.15	3.09	0.98	1123	2.91	2.85	0.98	1166
31	20	3.61	3.10	0.86	1102	3.36	2.89	0.86	1156	3.12	2.68	0.86	1220
31	22	3.82	2.82	0.74	1145	3.57	2.64	0.74	1210	3.33	2.46	0.74	1253
31	24	4.03	2.50	0.62	1188	3.78	2.34	0.62	1242	3.57	2.21	0.62	1296
31	26	4.24	2.12	0.50	1231	3.99	2.00	0.50	1285	3.75	1.87	0.50	1339
32	18	3.43	3.50	1.02	1058	3.15	3.21	1.02	1123	2.91	2.96	1.02	1166
32	20	3.61	3.24	0.90	1102	3.36	3.02	0.90	1156	3.12	2.80	0.90	1220
32	22	3.82	2.98	0.78	1145	3.57	2.78	0.78	1210	3.33	2.59	0.78	1253
32	24	4.03	2.66	0.66	1188	3.78	2.49	0.66	1242	3.57	2.36	0.66	1296
32	26	4.24	2.29	0.54	1231	3.99	2.15	0.54	1285	3.75	2.02	0.54	1339

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA HEAT operation

MUZ-GA25VA MUZ-GA25VAH **Rated frequency 85Hz**

CAPACITY:3.2(kW) INPUT:760(W)

	OUTDOOR WB(℃)													
INDOOR DB(℃)	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.02	494	2.43	593	2.85	669	3.26	722	3.68	768	4.06	790	4.48	806
21	1.92	532	2.30	631	2.72	699	3.10	752	3.52	790	3.90	813	4.30	844
26	1.73	570	2.14	669	2.53	737	2.94	790	3.36	828	3.74	851	4.16	874

MUZ-GA35VA MUZ-GA35VAH **Rated frequency 96Hz**

CAPACITY:4.0(kW) INPUT:1055(W)

	OUTDOOR WB(℃)													
INDOOR DB(℃)	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.52	686	3.04	823	3.56	928	4.08	1002	4.60	1066	5.08	1097	5.60	1118
21	2.40	739	2.88	876	3.40	971	3.88	1044	4.40	1097	4.88	1129	5.38	1171
26	2.16	791	2.68	928	3.16	1023	3.68	1097	4.20	1150	4.68	1182	5.20	1213

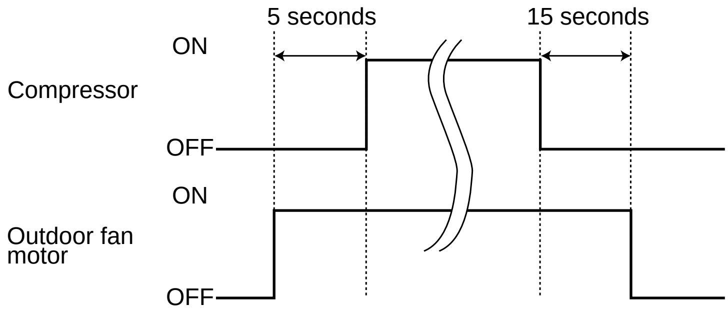
NOTE Q:Total capacity (kW) INPUT:Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature

9 ACTUATOR CONTROL

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

9-1. Outdoor fan motor control

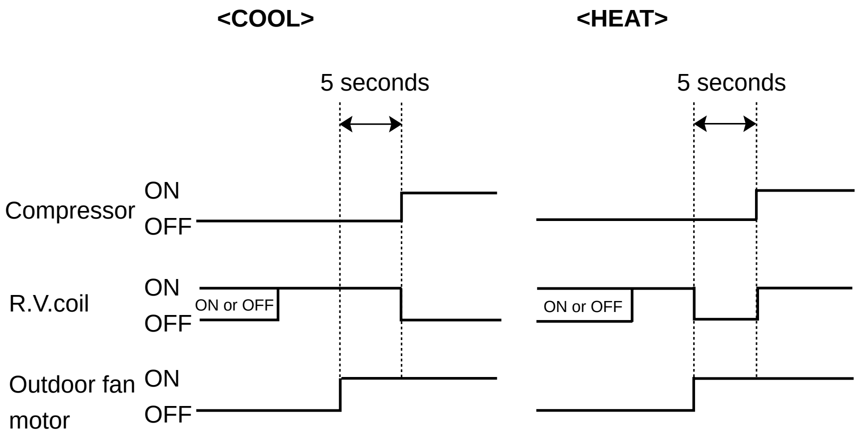
The fan motor turns ON/OFF, interlocking with the compressor.
[ON] The fan motor turns ON 5 seconds before the compressor starts up.
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



9-2. R.V. coil control

Heating ················ ON
Cooling ················· OFF
Dry ···················· OFF

NOTE: The 4-way valve reverses for 5 seconds right before start-up of the compressor.



9-3. Relation between main sensor and actuator

Sensor	Purpose	Actuator						
		Compressor	LEV	Outdoor fan motor	R.V. coil	Indoor fan motor	Defrost heater	Solenoid valve
Discharge temperature thermistor	Protection	○	○ ※1					
Indoor coil temperature thermistor	Cooling : Coil frost prevention	○						
	Heating : High pressure protection	○	○ ※1					
Defrost thermistor	Cooling : High pressure protection	○	○ ※1					
	Heating : Defrosting	○	○ ※1	○	○	○		
Fin temperature thermistor	Protection	○		○ ※1				
Ambient temperature thermistor	Cooling : Low ambient temperature operation	○	○ ※1	○				○ ※2
	Heating : Defrosting (Heater)						○	

※1 MUZ-GA35VA
MUZ-GA35VAH

※2 MUZ-GA25VA-E1/E2/E3(Serial No. ~6021350T)
MUZ-GA25VAH-E1/E2/E3(Serial No. ~7000000T)

10 SERVICE FUNCTIONS

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

CHANGE IN DEFROST SETTING

<JS> When the JS wire of the outdoor Inverter P.C. board is cut/ soldered, the defrost finish temperature is changed.
(Refer to 11-7-1.)

Jumper wire		Defrost finish temperature			
		MUZ-GA25VA	MUZ-GA25VAH	MUZ-GA35VA	MUZ-GA35VAH
JS	soldered (Initial setting)	5℃	8℃	5℃	8℃
	none (cut)	8℃	15℃	8℃	15℃

11 TROUBLESHOOTING

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

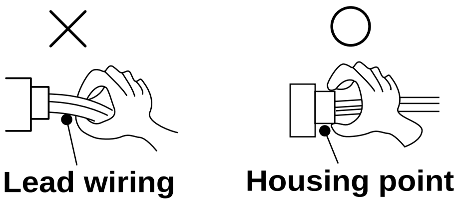
11-1. Cautions on troubleshooting

1. Before troubleshooting, check the following:

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for mis-wiring.

2. Take care of the following during servicing

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and / or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
3) When removing the electrical parts, be careful to the residual voltage of smoothing capacitor.
4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.



3. Troubleshooting procedure

1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
2) Before servicing check that the connector and terminal are connected properly.
3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) When troubleshooting, refer to 11-2., 11-3. and 11-4.

11-2. Failure mode recall function

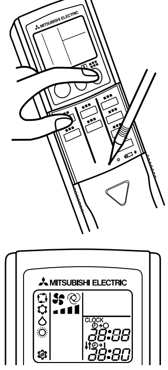
Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (11-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which doesn't recur.

1. Flow chart of failure mode recall function for the indoor/outdoor unit



Operational procedure

The cause of abnormality cannot be found because the abnormality doesn't recur.

Setting up the failure mode recall function

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
② First, release RESET button.
And release the other two buttons after all LCD except the set temperature in operation display section of the remote controller is displayed after 3 seconds.

↓

Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

↓

Does the left lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal.
Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

No (OFF) → Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that can't be recalled with this way.
Confirm if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function.(Refer to 11-2.2)

Yes (Blinks) ↓

Judgment of indoor/outdoor abnormality

Before blinking, does the left lamp of OPERATION INDICATOR lamp stay ON for 3 seconds?
Stays ON for 3 seconds (without beep):
The outdoor unit is abnormal.

Yes → The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table (Refer to 11-2.3).
Make sure to check at least two consecutive blinking cycles. ※3

No → The indoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the indoor unit failure mode table (Refer to indoor unit service manual.)
Make sure to check at least two consecutive blinking cycles. ※2

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

↓

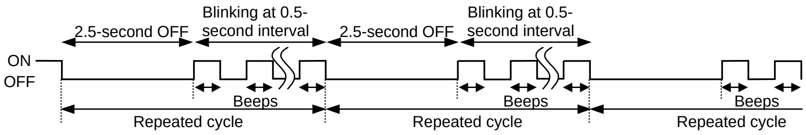
Repair the defective parts.

Deleting the memorized abnormal condition

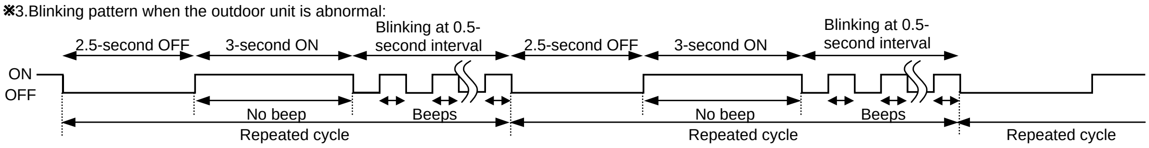
①After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
②Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

Note1.Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.
2.If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:



※3.Blinking pattern when the outdoor unit is abnormal:



2. Flow chart of the detailed outdoor unit failure mode recall function

Operational procedure

The outdoor unit might be abnormal.
Confirm if outdoor unit is abnormal according to the following procedures.

↓

Confirm that the remote controller is in the failure mode recall function.

↓

With the remote controller headed towards the indoor unit, press TOO COOL or TOO WARM button to adjust the set temperature to 25℃. ※1

※1. Regardless of normal or abnormal condition, 2 short beeps are emitted as the signal is received.

↓

Does left lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: The outdoor unit is abnormal.
Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

Yes (Blinks) →

The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table (Refer to 11-2.3.).
Make sure to check at least two consecutive blinking cycles. ※2

↓

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

↓

Repair the defective parts.

↓

Deleting the memorized abnormal condition

①After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
②Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

No (OFF) →

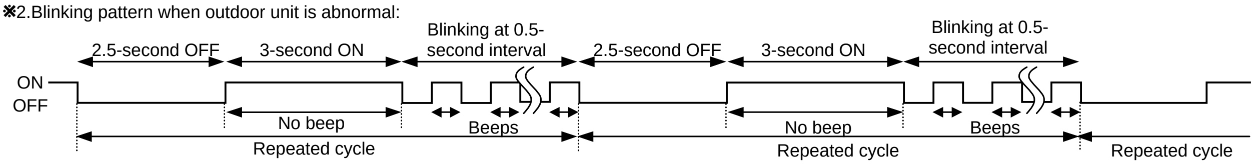
The outdoor unit is normal.

↓

Release the failure mode recall function according to the left mentioned procedure.

Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2.Blinking pattern when outdoor unit is abnormal:

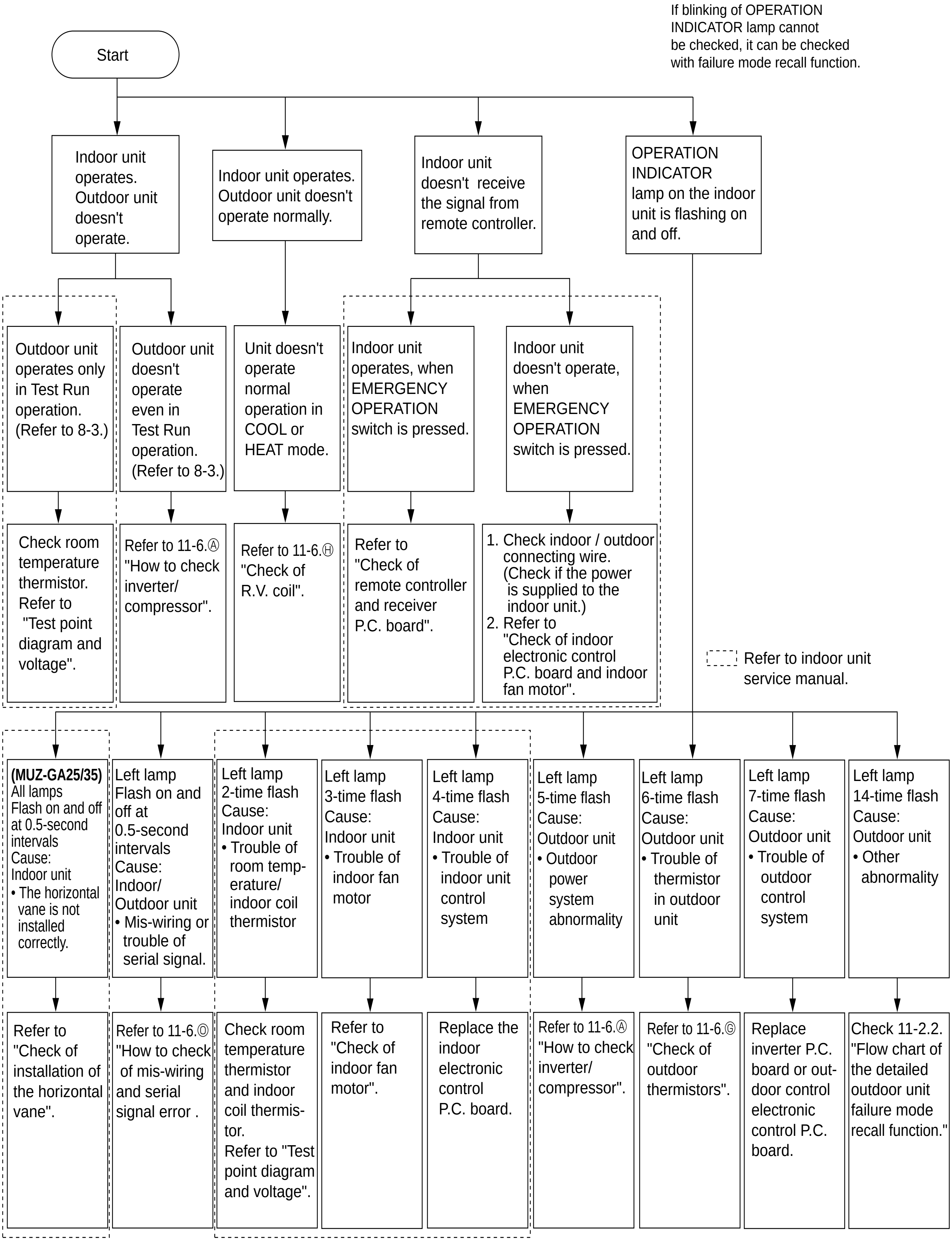


3. Outdoor unit failure mode table

NOTE : Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-4.).

POWER lamp (Indoor unit)	Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)	Condition	Correspondence	Indoor/outdoor unit failure mode recall function	Outdoor unit failure mode recall function
OFF	None (Normal)	———	———	———	———	———
2-time flash 2.5 seconds OFF	Outdoor power system	———	When it consecutively occurs 3 times that the compressor stops for overcurrent protection within 1 minute after stat-up.	•Reconnect connectors. •Refer to 11-6.Ⓐ"How to check inverter/ compressor". •Check stop valve.	○	○
3-time flash 2.5 seconds OFF	Discharge temperature thermistor	1-time flash every 2.5 seconds	When thermistor shorts or opens during compressor running.	•Refer to 11-6.Ⓖ"Check of outdoor thermistors". ❋Defective outdoor thermistors can be identified by checking the blinking pattern of LED.	○	○
	Defrost thermistor					
	Fin temperature thermistor	3-time flash 2.5 seconds OFF				
	P.C. board temperature thermistor	4-time flash 2.5 seconds OFF				
	Ambient temperature thermistor	2-time flash 2.5 seconds OFF				
4-time flash 2.5 seconds OFF	Overcurrent	11-time flash 2.5 seconds OFF	When 14A(MUZ-GA25VA,MUZ-GA25VAH)/ 24A (MUZ-GA35VA,MUZ-GA35VAH) current flow into intelligent power module.	•Reconnect compressor connector. •Refer to 11-6.Ⓐ"How to check inverter/ compressor". •Check stop valve.	———	○
	Compressor synchronous abnormality (Compressor start-up failure protection)	12-time flash 2.5 seconds OFF	When waveform of compressor current is distorted.	•Reconnect compressor connector. •Refer to 11-6.Ⓐ"How to check inverter/ compressor".	———	○
5-time flash 2.5 seconds OFF	Discharge temperature	———	When temperature of discharge temperature thermistor exceeds 116℃, compressor stops. Compressor can restart if discharge temperature thermistor reads 100℃ or less 3 minutes later.	•Check refrigerant circuit and refrigerant amount. •Refer to 11-6.Ⓛ"Check of LEV".	———	○
6-time flash 2.5 seconds OFF	High pressure	———	When temperature of indoor coil thermistor exceeds 70℃ in HEAT mode. When defrost thermistor exceeds 70℃ in COOL mode.	•Check refrigerant circuit and refrigerant amount. •Check stop valve.	———	○
7-time flash 2.5 seconds OFF	Fin temperature/ P.C. board temperature	7-time flash 2.5 seconds OFF	When temperature of fin temperature thermistor on the inverter P.C. board exceeds 82 ℃(MUZ-GA25VA, MUZ-GA25VAH)/ 83℃(MUZ-GA35VA,MUZ-GA35VAH), or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 81℃(MUZ-GA25VA, MUZ-GA25VAH)/ 85℃(MUZ-GA35VA,MUZ-GA35VAH).	•Check around outdoor unit. •Check outdoor unit air passage. •Refer to 11-6.Ⓘ"Check of outdoor fan motor".	———	○
8-time flash 2.5 seconds OFF	Outdoor fan motor	———	When outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	•Refer to 11-6.Ⓘ"Check of outdoor fan motor. Refer to 11-6.Ⓝ"Check of inverter P.C. board".	———	○
9-time flash 2.5 seconds OFF	Nonvolatile memory data	5-time flash 2.5 seconds OFF	When nonvolatile memory data cannot be read properly.	•Replace the inverter P.C. board.	○	○
10-time flash 2.5 seconds OFF	Discharge temperature	———	When temperature of discharge temperature thermistor has been 50℃ or less for 20 minutes.	•Refer to 11-6.Ⓛ"Check of LEV". •Check refrigerant circuit and refrigerant amount.	———	○
11-time flash 2.5 seconds OFF	DC voltage	8-time flash 2.5 seconds OFF	When DC voltage of inverter cannot be detected normally.	•Refer to 11-6.Ⓐ"How to check inverter/ compressor".	———	○
	Each phase current of compressor	9-time flash 2.5 seconds OFF	When each phase current of compressor cannot be detected normally.			
12-time flash 2.5 seconds OFF	Overcurrent Compressor open-phase	10-time flash 2.5 seconds OFF	When 14A(MUZ-GA25VA,MUZ-GA25VAH)/ 24A (MUZ-GA35VA,MUZ-GA35VAH) current flow into intelligent power module (IPM). When the open-phase operation of compressor is detected. When the interphase short out occurs in the output of the intelligent power module (IPM).	•Reconnect compressor connector. •Refer to 11-6. Ⓐ"How to check inverter/ compressor".	———	○
14-time flash 2.5 seconds OFF	Outdoor unit (Other abnormality)	———	When the compressor winding shorts out. When the inverter P.C. board is defective.	•Replace the inverter P.C. board.	———	○

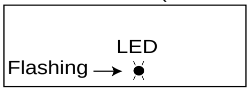
11-3. Instruction of troubleshooting



11-4. Troubleshooting check table

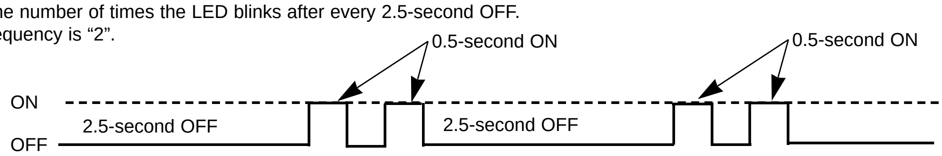
NOTE 1. The location of LED is illustrated at the right figure. Refer to 11-7.1.
2. LED is lighted during normal operation.

Inverter P.C. board (Parts side)



No.	Symptom	LED indication	Abnormal point/ Condition	Condition	Correspondence
1	Outdoor unit does not operate	1-time flash every 2.5 seconds	Outdoor power system	When it consecutively occurs 3 times that the compressor stops for overcurrent protection within 1minute after start-up.	· Check stop valve. · Reconnect connector of compressor. · Refer to 11-6.Ⓐ "How to check inverter/ compressor".
2			Outdoor thermistors	When discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor or ambient temperature thermistor shorts or opens during compressor running.	· Refer to 11-6.Ⓖ "Check of outdoor thermistors".
3			Outdoor control system	When nonvolatile memory data cannot be read properly. (When POWER lamp of the indoor unit lights up or flashes 7-time.)	Replace inverter P.C. board.
4		6-time flash 2.5 seconds OFF	Serial signal	When the communication fails between the indoor and outdoor unit for 3 minutes.	Refer to 11-6.Ⓓ "How to check mis-wiring and serial signal error.
5		14-time flash 2.5 seconds OFF	Outdoor unit (Other abnormality)	When outdoor unit is defective.	Refer to 11-2.2. Flow chart of the detailed outdoor unit failure mode recall function.
6	'Outdoor unit stops and restarts 3 minutes later' is repeated	2-time flash 2.5 seconds OFF	Overcurrent protection	When 14A(MUZ-GA25VA,MUZ-GA25VAH)/ 24A(MUZ-GA35VA, MUZ-GA35VAH) current flows into intelligent power module.	· Check stop valve. · Reconnect connector of compressor. · Refer to 11-6.Ⓐ "How to check inverter/compressor".
7		3-time flash 2.5 seconds OFF	Discharge temperature overheat protection	When temperature of discharge temperature thermistor exceeds 116℃, compressor stops. Compressor can restart if discharge temperature thermistor reads 100℃ or less 3 minutes later.	· Check refrigerant circuit and refrigerant amount. · Refer to 11-6.Ⓛ "Check of LEV".
8		4-time flash 2.5 seconds OFF	Fin temperature /P.C. board temperature thermistor overheat protection	When temperature of fin temperature thermistor on the heat sink exceeds 82℃(MUZ-GA25VA,MUZ-GA25VAH)/ 83℃ (MUZ-GA35VA,MUZ-GA35VAH) or temperature of P.C. board temperature thermistor on the inverter P.C.board exceeds 81℃(MUZ-GA25VA,MUZ-GA25VAH)/ 85℃(MUZ-GA35VA, MUZ-GA35VAH).	· Check around outdoor unit. · Check outdoor unit air passage. · Refer to 11-6.Ⓘ "Check of outdoor fan motor".
9		5-time flash 2.5 seconds OFF	High pressure protection	When indoor coil thermistor exceeds 70℃ in HEAT mode. When the defrost thermistor exceeds 70℃ in COOL mode.	· Check refrigerant circuit and refrigerant amount. · Check stop valve.
10		8-time flash 2.5 seconds OFF	Compressor synchronous abnormality	When the waveform of compressor current is distorted.	· Reconnect connector of compressor. · Refer to 11-6.Ⓐ "How to check inverter/compressor".
11		10-time flash 2.5 seconds OFF	Outdoor fan motor	When outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	· Refer to 11-6.Ⓘ "Check of outdoor fan motor. · Refer to 11-6.Ⓝ "Check of inverter P.C. board.
12		12-time flash 2.5 seconds OFF	Each phase current of compressor	When each phase current of compressor cannot be detected normally	· Refer to 11-6.Ⓐ "How to check inverter/compressor".
13		13-time flash 2.5 seconds OFF	DC voltage	When DC voltage of inverter cannot be detected normally.	· Refer to 11-6.Ⓐ "How to check inverter/compressor".
14	Outdoor unit operates	1-time flash 2.5 seconds OFF	Frequency drop by current protection	When current from power outlet exceeds 5.2A(MUZ-GA25VA, MUZ-GA25VAH)/ 6.1A(MUZ-GA35VA,MUZ-GA35VAH), compressor frequency lowers.	The unit is normal, but check the following. · Check if indoor filters are clogged. · Check if refrigerant is short. · Check if indoor/outdoor unit air circulation is short cycled.
15		3-time flash 2.5 seconds OFF	Frequency drop by high pressure protection	When temperature of indoor coil thermistor exceeds 55℃ in HEAT mode, compressor frequency lowers.	
			Frequency drop by defrosting in COOL mode	When indoor coil thermistor reads 8℃ or less in COOL mode, compressor frequency lowers.	
16		4-time flash 2.5 seconds OFF	Frequency drop by discharge temperature protection	When temperature of discharge temperature thermistor exceeds 111℃, compressor frequency lowers.	· Check refrigerant circuit and refrigerant amount. · Refer to 11-6.Ⓛ "Check of LEV". · Refer to 11-6.Ⓖ "Check of outdoor thermistors".
17	Outdoor unit operates	7-time flash 2.5 seconds OFF	Low discharge temperature protection	When temperature of discharge temperature thermistor has been 50℃ or less for 20 minutes.	· Refer to 11-6.Ⓛ "Check of LEV". · Check refrigerant circuit and refrigerant amount.
18		8-time flash 2.5 seconds OFF	PAM protection PAM: Pulse Amplitude Modulation	When the overcurrent flows into IGBT(Insulated Gate Bipolar transistor : TR821) or when the bus-bar voltage reaches 320V or more, PAM stops and restarts.	This is not malfunction. PAM protection will be activated in the following cases; ①Instantaneous power voltage drop (Short time power failure) ②When the power supply voltage is high.
19		9-time flash 2.5 seconds OFF	Inverter check mode	When the connector of compressor is disconnected, inverter check mode starts.	Check if the connector of the compressor is correctly connected. Refer to 11-6.Ⓐ "How to check inverter/ compressor".

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is “2”.



11-5. Trouble criterion of main parts

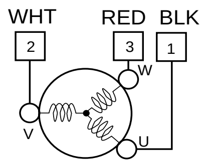
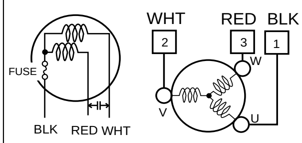
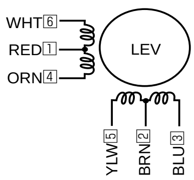
MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Defrost thermistor (RT61)

Ambient temperature thermistor (RT65)</td><td>Measure the resistance with a tester.

Refer to 11-7. "Test point diagram and voltage", 1. "Inverter P.C. board", the chart of thermistor.</td><td></td></tr>
<tr><td>Discharge temperature thermistor (RT62)

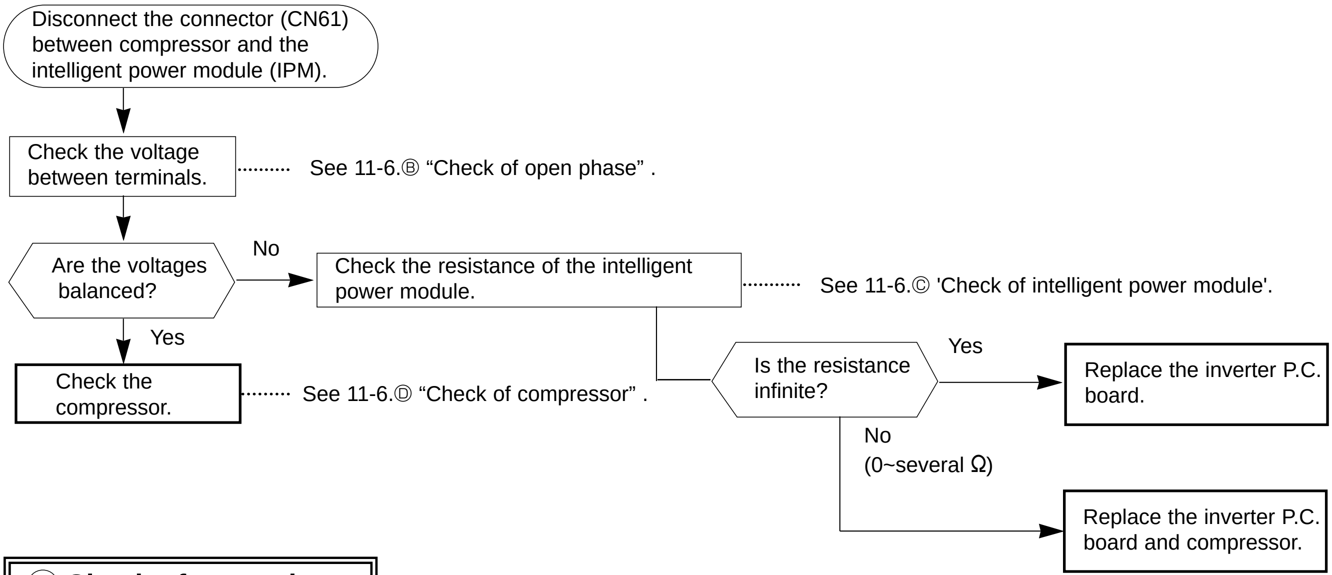
Fin temperature thermistor (RT64)</td><td>Measure the resistance with a tester.
Before measurement, hold the thermistor with your hands to warm it up.

Refer to 11-7. "Test point diagram and voltage", 1. "Inverter P.C. board", the chart of thermistor.</td><td></td></tr>
<tr><td>Compressor(MC)</td><td>Measure the resistance between the terminals with a tester.
(Part temperature –20°C ~ 40°C)
<table>
<tr><td></td><td colspan="2">Normal</td></tr>
<tr><td></td><td>MUZ-GA25VA
MUZ-GA25VAH</td><td>MUZ-GA35VA
MUZ-GA35VAH</td></tr>
<tr><td>U-V
U-W
V-W</td><td>1.58 Ω ~ 2.03Ω</td><td>1.28 Ω ~ 1.66 Ω</td></tr>
</table></td><td>
</td></tr>
<tr><td>Outdoor fan motor(MF)
INNER FUSE
(Only MUZ-GA25VA/H)
$152\pm^{0}_{5}$ °C CUT OFF</td><td>Measure the resistance between the terminals with a tester.
(Part temperature –20°C ~ 40°C)
<table>
<tr><td rowspan="2">Color of the lead wire</td><td colspan="2">Normal</td></tr>
<tr><td>MUZ-GA25VA
MUZ-GA25VAH</td><td>MUZ-GA35VA
MUZ-GA35VAH</td></tr>
<tr><td>WHT – BLK</td><td>292 Ω ~ 374 Ω</td><td>31 Ω ~ 41 Ω</td></tr>
<tr><td>BLK – RED</td><td>236 Ω ~ 304 Ω</td><td>31 Ω ~ 41 Ω</td></tr>
<tr><td>RED – WHT</td><td>——</td><td>31 Ω ~ 41 Ω</td></tr>
</table></td><td>MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

</td></tr>
<tr><td>R.V. coil(21S4)</td><td>Measure the resistance between the terminals with a tester.
(Part temperature –20°C ~ 40°C)
<table>
<tr><td colspan="2">Normal</td></tr>
<tr><td>MUZ-GA25VA
MUZ-GA25VAH</td><td>MUZ-GA35VA
MUZ-GA35VAH</td></tr>
<tr><td>1.26 kΩ ~ 1.62 kΩ</td><td>1.20 kΩ ~ 1.55 kΩ</td></tr>
</table></td><td></td></tr>
<tr><td>Expansion valve coil(LEV)
MUZ-GA35VA
MUZ-GA35VAH</td><td>Measure the resistance with a tester.
(Part temperature : –20°C ~ 40°C)
<table>
<tr><td>Color of the lead wire</td><td>Normal</td></tr>
<tr><td>WHT – RED</td><td rowspan="4">38 Ω ~ 50 Ω</td></tr>
<tr><td>RED – ORN</td></tr>
<tr><td>YLW – BRN</td></tr>
<tr><td>BRN – BLU</td></tr>
</table></td><td>
</td></tr>
<tr><td>Defrost heater(H)</td><td>Measure the resistance with a tester.
(Part temperature -20°C ~ 40°C)
<table>
<tr><td>Normal</td></tr>
<tr><td>333 Ω ~ 428 Ω</td></tr>
</table></td><td></td></tr>
<tr><td>Solenoid valve coil (21R1)
MUZ-GA25VA-E1/E2/E3 (Serial No. ~6021350T)
MUZ-GA25VAH-E1/E2/E3 (Serial No. ~7000000T)</td><td>Measure the resistance with a tester.
(Part temperature -20°C ~ 40°C)
<table>
<tr><td>Normal</td></tr>
<tr><td>1,220 Ω ~ 1,580 Ω</td></tr>
</table></td><td></td></tr>
</table>

11-6. Troubleshooting flow

When OPERATION INDICATOR lamp flashes 5-time.
Outdoor unit does not operate.

Ⓐ How to check inverter/ compressor



Ⓑ Check of open phase

●With the connector between the compressor and the intelligent power module disconnected, activate the inverter and check if the inverter is normal by measuring the balance of voltage between the terminals.

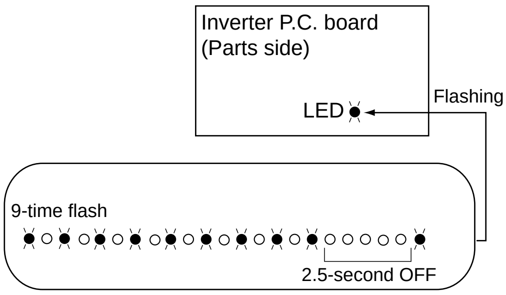
Output voltage 115V

<< Operation method>>
Start cooling or heating operation by pressing EMERGENCY OPERATION switch on the indoor unit. (Test run operation : refer to 8-3.)

<<Measurement point>>
at 3 points
BLK (U)-WHT (V)
BLK (U)-RED (W)
WHT(V)-RED (W)

※ Measure AC voltage between the lead wires at 3 points.

NOTE 1. Output voltage varies according to power supply voltage.
2. Measure the voltage by analog type tester.
3. During this check, LED of inverter P.C. board flashes 9 times.

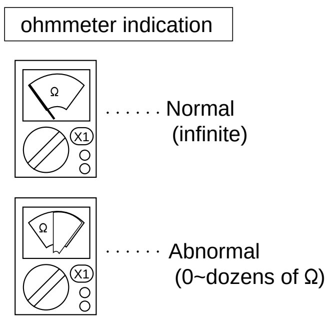


Ⓒ Check of intelligent power module

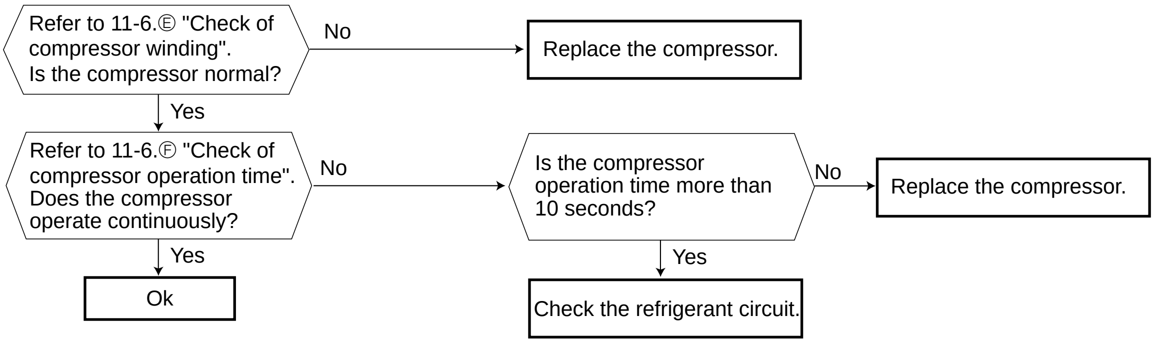
●Measure the resistance between the terminals on the intelligent power module.

<<Measurement point>>
at 6 points
BLK-WHT, WHT-BLK
BLK-RED, RED-BLK
WHT-RED, RED-WHT

<<Judgement>>
Infinite [Ω]·········Normal
0~dozens of ·····Abnormal (short)



Ⓓ Check of compressor



Ⓔ Check of compressor winding

● Disconnect the connector (CN61) between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

<<Measurement point>>

at 3 points
BLK-WHT
BLK-RED
WHT-RED

※ Measure the resistance between the lead wires at 3 points.

<<Judgement>>

Refer to 11-5.
0[Ω] ············Abnormal [short]
Infinite[Ω] ······Abnormal [open]

NOTE 1. Be sure to zero the ohmmeter before measurement.
2. Winding resistance for each phase at 20℃.
Refer to 3.SPECIFICATION.

Ⓕ Check of compressor operation time

●Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to over current.

<<Operation method>>

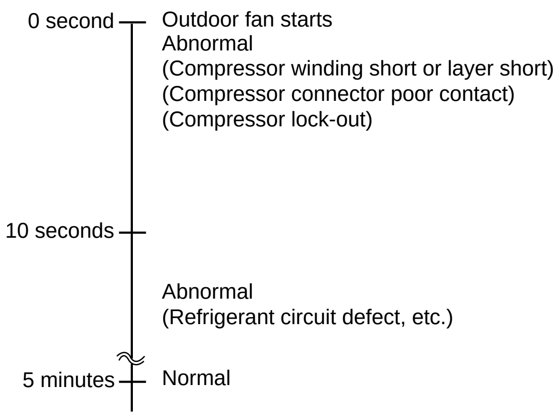
Start heating or cooling operation by pressing EMERGENCY OPERATION switch on the indoor unit.
(Test run operation : Refer to 8-3.)

<<Measurement>>

Measure the time from the start of outdoor fan running to the stop of compressor due to over current.

<<Judgement>>

For reference
0~10 seconds··················Abnormal (compressor short or poor contact)
(compressor lock-out)
10 seconds~5 minutes······Abnormal (refrigerant circuit defect)
more than 5 minutes·········Normal



When OPERATION INDICATOR lamp flashes 6-time.
The thermistors in the outdoor unit are abnormal.

Ⓖ Check of outdoor thermistors

Disconnect the connectors CN641, CN642 and CN643 from the inverter P.C. board.
(Check the characteristics of each thermistor.)

Defrost thermistor RT61

Measure the resistance between CN641 ① and ②.

Discharge temperature thermistor RT62

Measure the resistance between CN641 ③ and ④.

Fin temperature thermistor RT64

Measure the resistance between CN642 ① and ②.

Ambient temperature thermistor RT65

Measure the resistance between CN643 ① and ②.

Is the resistance of thermistor normal? (Refer to 11-7.1.)

- No → Replace the thermistor except RT64. In case that RT64 is abnormal, replace the inverter P.C. board, since RT64 is combined with the inverter P.C. board.
- Yes → Reconnect the connectors CN641, CN642 and CN643. Turn ON the power supply and press EMERGENCY OPERATION switch.

Does the unit operate 10 minutes or more?

- No → Replace the inverter P.C. board.
- Yes → OK. (Cause is poor contact.)

Ⓗ Check of R.V. coil

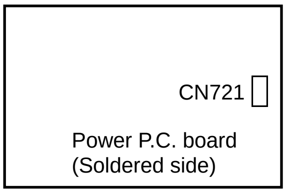
※ First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-5.
※ In case CN721 is not connected or R.V. coil is open, voltage is generated between the terminal pins of the connector although any signal is not being transmitted to R.V. coil. Check if CN721 is connected.

Unit operates COOL mode even if it is set to HEAT mode.

Disconnect connector (CN61) between the compressor and intelligent power module. Turn ON the power supply and press EMERGENCY OPERATION switch twice (HEAT mode).

Is there 230V AC between CN721① and ② on the power P.C.board 3 minutes after the power supply is turned ON?

- No → Replace the power P.C. board.
- Yes → Replace the 4-way valve.



Unit operates HEAT mode even if it is set to COOL mode.

Disconnect connector (CN61) between the compressor and the intelligent power module. Turn ON the power supply and press EMERGENCY OPERATION switch once (COOL mode).

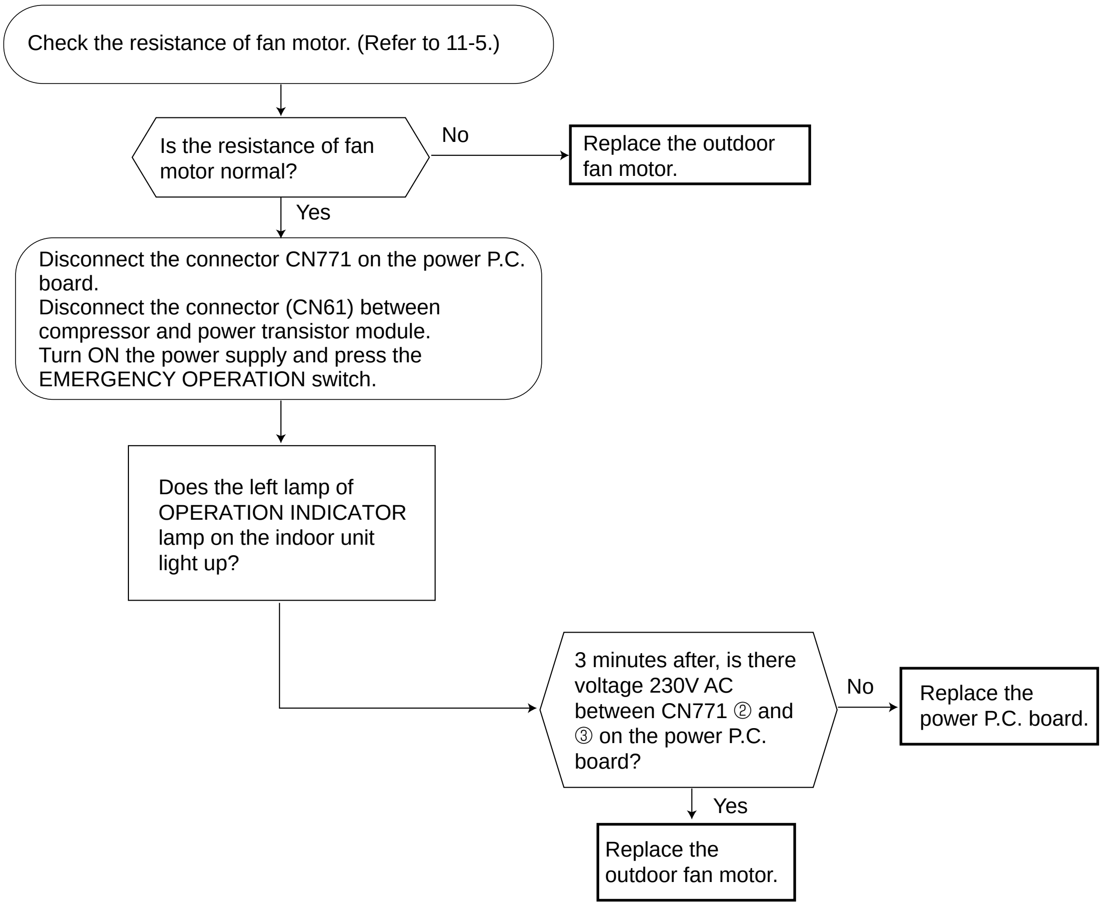
Is there 230V AC between CN721① and ② on the power P.C. board 3 minutes after the power supply is turned ON?

- Yes → Replace the power P.C. board.
- No → Replace the 4-way valve.

Outdoor fan motor does not operate.

Ⓘ Check of outdoor fan motor

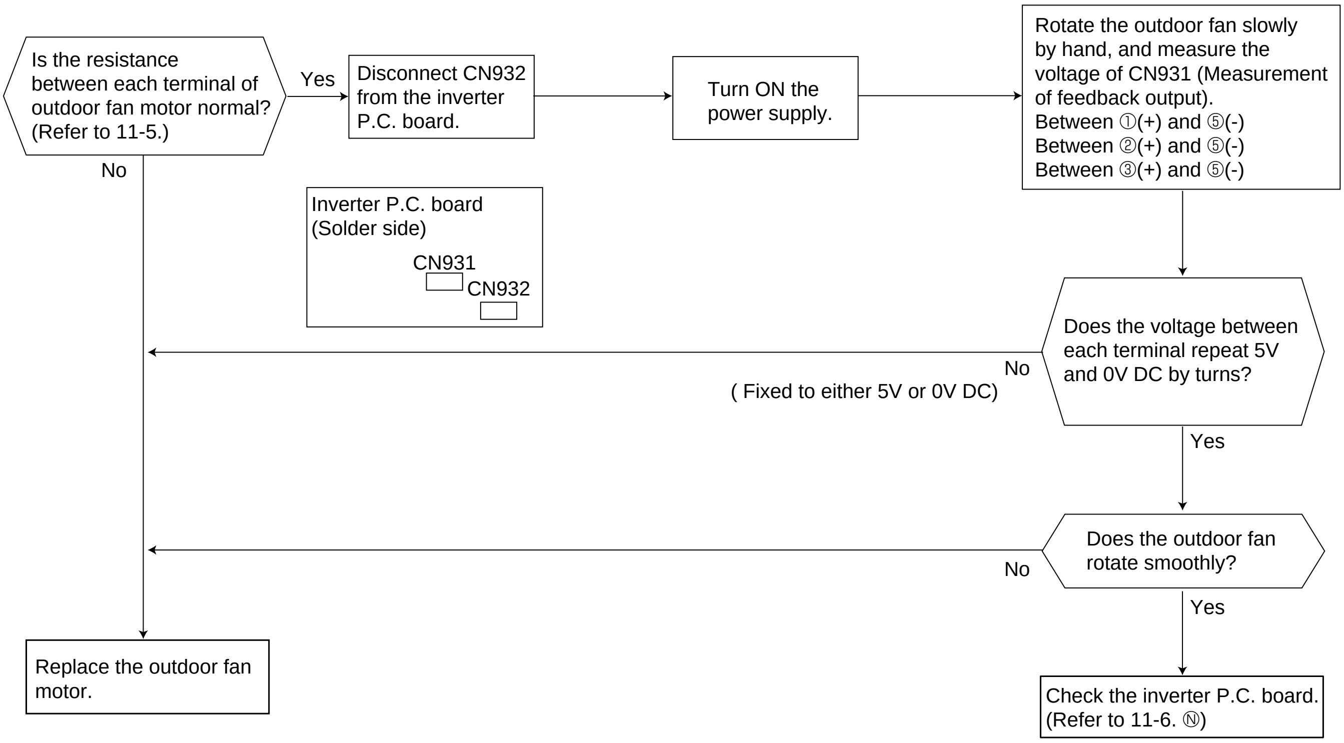
MUZ-GA25VA
MUZ-GA25VAH



Outdoor fan motor does not operate.

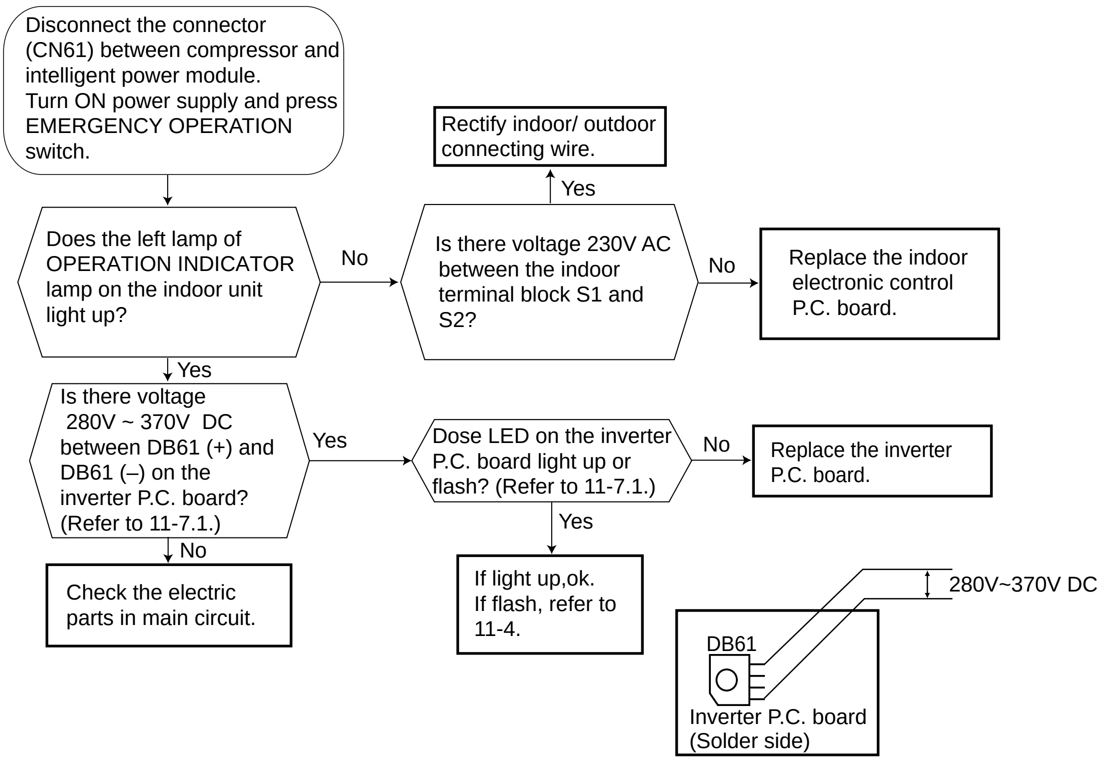
Ⓘ Check of outdoor fan motor

MUZ-GA35VA
MUZ-GA35VAH



Inverter does not operate.

Ⓙ Check of power supply



Outdoor unit does not operate at all, or stops immediately due to overcurrent.

Ⓚ Check of current-limiting resistor

When the current-limiting resistor is open, the rush current limiting relay (X64) may not work properly.

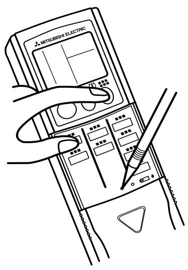
Is the resistance of current-limiting resistor (R64A or R64B) on the power P.C. board normal? (Normal resistance : 5Ω ±5%)
- No → Replace the power P.C. board.
- Yes → Turn ON the power supply and press EMERGENCY OPERATION switch. → Does LED on the inverter P.C. board light up?
  - No → Replace the power P.C. board or the inverter P.C. board.
  - Yes → Does the rush current limiting relay(X64) work properly? (Normally it closes 1 second after outdoor unit power ON.)
    - Yes → Replace the inverter P.C. board or the compressor.
    - No → Replace the power P.C.board.

● Check other electric parts in the main circuit together in the case that the current-limiting resistor is defective.

Heating/Cooling does not work sufficiently.

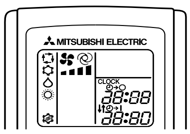
Ⓛ Check of LEV (Expansion valve)

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
② First, release RESET button.
And release the other two buttons after all LCD except the set temperature in operation display section of the remote controller is displayed after 3 seconds.



↓

Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1



※1. Regardless of normal or abnormal, a short beep is emitted once as the signal is received.

↓

Expansion valve operates in full-opening direction.

↓

Do you hear the expansion valve "click, click······"? Do you feel the expansion valve vibrate on touching it ?
- Yes → Ok
- No → Is LEV properly fixed to the expansion valve?
  - No → Properly fix the LEV to the expansion valve.
  - Yes → Does the resistance of LEV have the characteristics? (Refer to 11-5.)
    - No → Replace the LEV.
    - Yes → Measure each voltage between connector pins of CN724 on the inverter P.C. board.
      1.Pin③(-) − Pin①(+)
      2.Pin④(-) − Pin①(+)
      3.Pin⑤(-) − Pin①(+)
      4.Pin⑥(-) − Pin①(+)
      Is there about 3~5V AC between each?
      NOTE: Measure the voltage by an analog tester.
      - No → Replace the inverter P.C. board.
      - Yes → Replace the expansion valve.

NOTE : After check of LEV, do the undermentioned operations.
1. Turn OFF the power supply and turn ON it again.
2. Press RESET button on the remote controller.

Outdoor base gets frozen.

Ⓜ Check of defrost heater

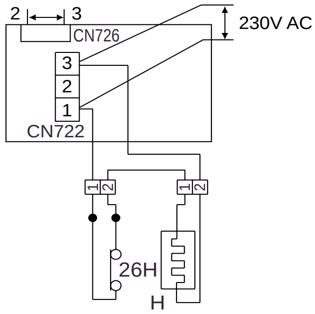
<MUZ-GA25VAH MUZ-GA35VAH>

Check the following points before checking electric continuity.
1) Does the resistance of ambient temperature thermistor have the characteristics? Refer to 11-7.1.
2) Is the resistance of defrost heater normal? Refer to 11-5.
3) Does the heater protector remain conducted (not open)?
4) Are both ambient temperature thermistor and circuit of defrost heater securely connected to connectors?

In HEAT mode, for more than 5 minutes, let the ambient temperature thermistor continue to read 5℃ or less, and let the defrost thermistor continue to read -1℃ or less.

NOTE: In case both thermistors are more than the above temperature, cool them with cold water etc...

- Is there 230V AC between CN722 ① and ③ on the power P.C. board? Refer to 11-7.2.
  - Yes → No problem of the power P.C. board.
  - No ↓
- Is the voltage between CN726 ②(+)-③(-) on the power P.C. board 0V DC? Refer to 11-7.2.
  - Yes → Replace the power P.C. board.
  - No → Replace the inverter P.C. board.

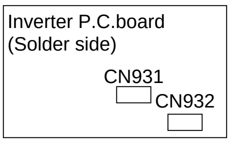


Outdoor fan motor does not operate, or stops immediately after starting up.

Ⓝ Check of inverter P.C. board

MUZ-GA35VA
MUZ-GA35VAH

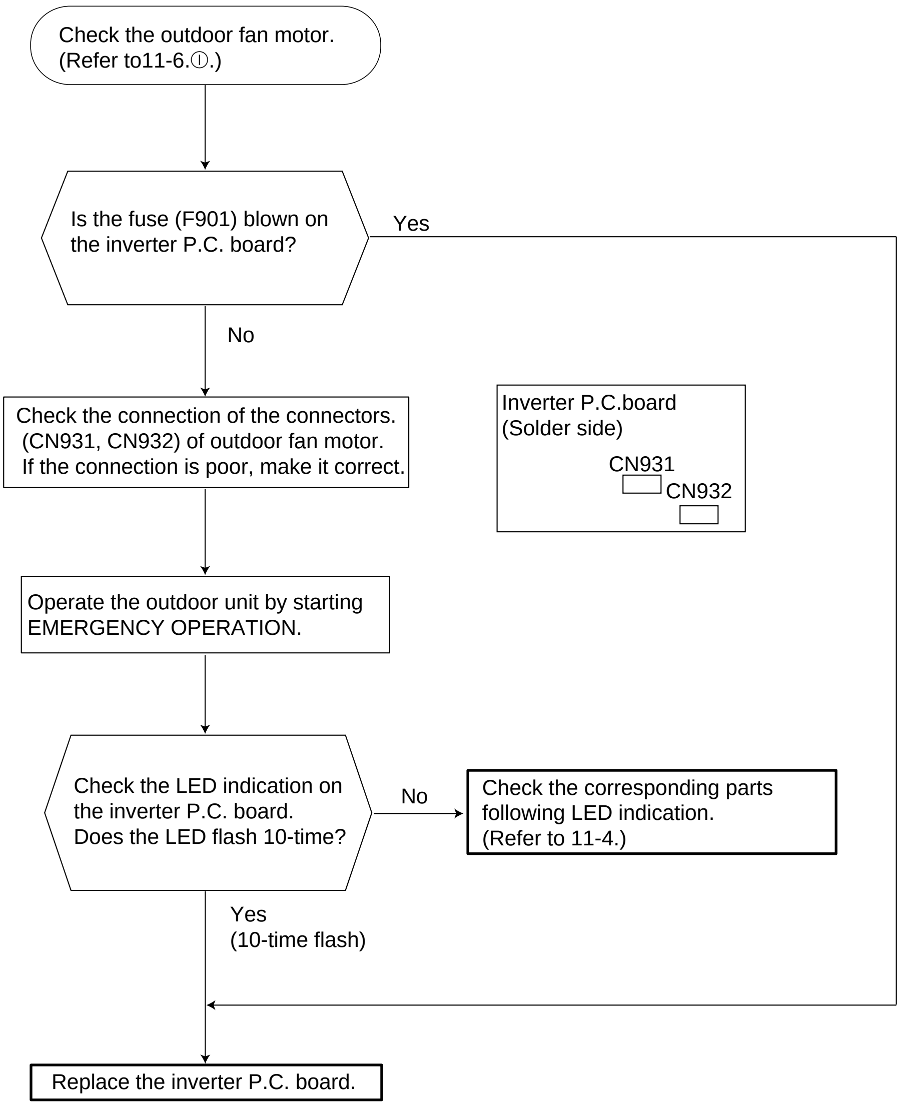
1. Check the outdoor fan motor. Refer to11-6.Ⓘ.
2. Check the connection of the connectors. (CN931, CN932) of outdoor fan motor. If the connection is poor, make it correct.
3. Operate the outdoor unit by starting EMERGENCY OPERATION.
4. Check the LED indication on the inverter P.C. board. Does the LED flash 10-time?
   - No → Check the corresponding parts following LED indication. (Refer to 11-4.)
   - Yes (10-time flash) → Replace the inverter P.C. board.



Outdoor fan motor does not operate, or stops immediately after starting up.

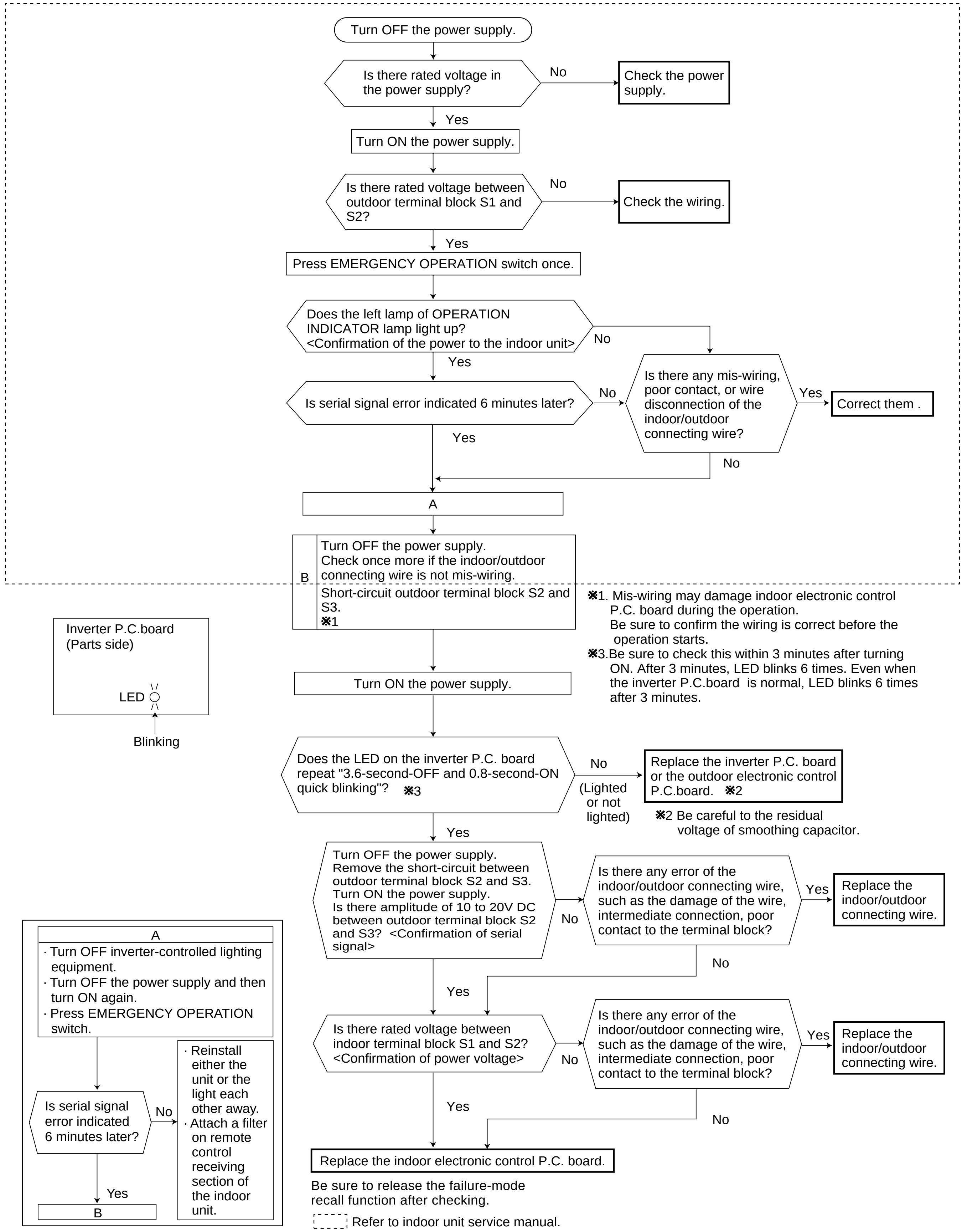
Ⓝ Check of inverter P.C. board

MUZ-GA35VA
MUZ-GA35VAH
※Alternative inverter P.C. board



• When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch.
Indoor unit does not operate.
• When OPERATION INDICATOR lamp flashes ON and OFF in every 0.5-second.
Outdoor unit doesn't operate.

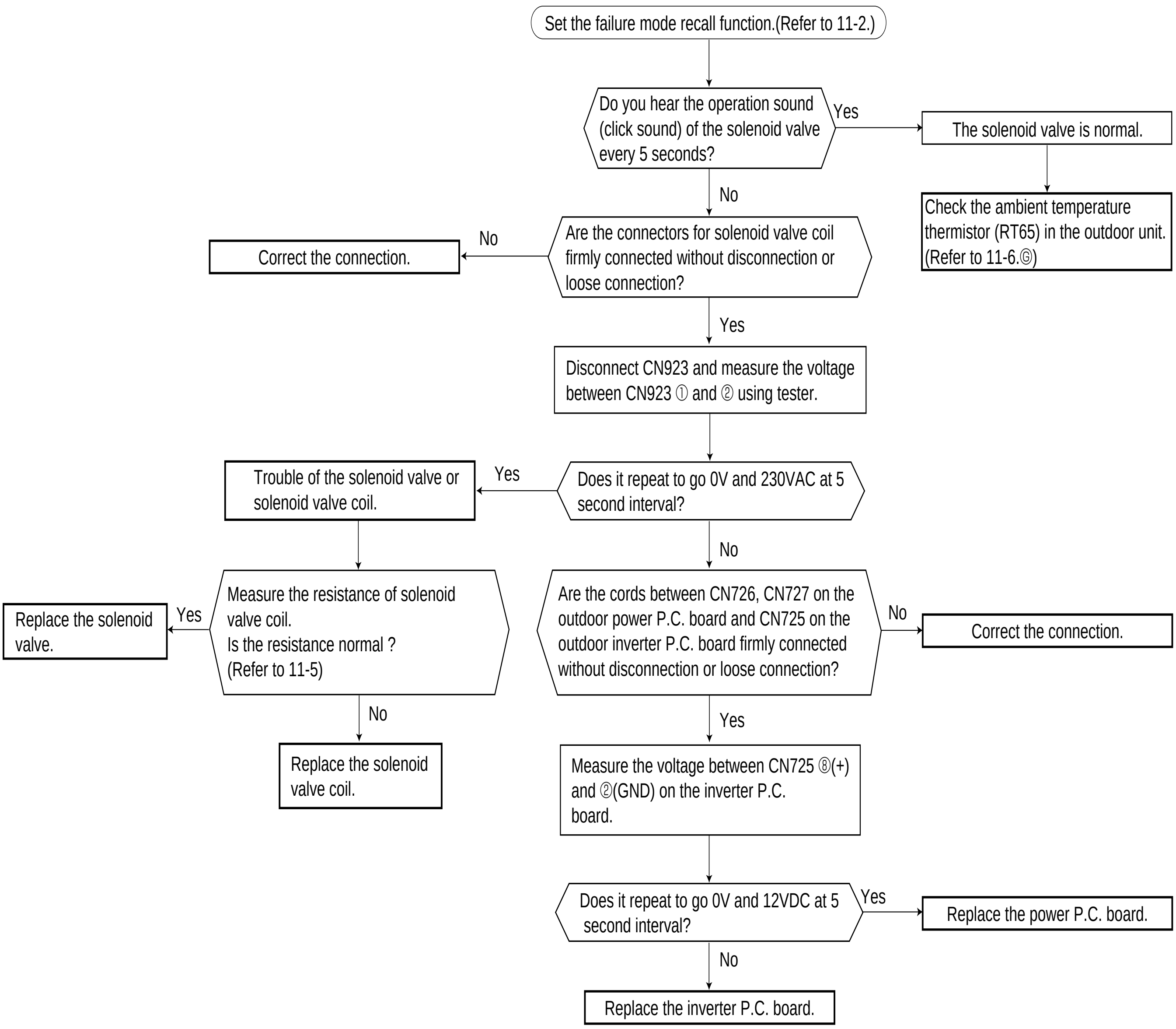
O How to check mis-wiring and serial signal error (when outdoor unit does not work)



When the cool air does not blow out from the indoor unit in Low Outside Temperature Operation, or the condensed water drops from the indoor unit.

Ⓟ Operation check of the solenoid valve.

MUZ-GA25VA-E1/E2/E3(Serial No. ~6021350T)
MUZ-GA25VAH-E1/E2/E3(Serial No. ~7000000T)



Ⓠ Electromagnetic noise enters into TV sets or radios

- **Is the unit earthed?**
  - No → Earth the unit.
  - Yes ↓
- **Is the distance between the antennas and the indoor unit within 3m, or is the distance between the antennas and the outdoor unit within 3m?**
  - Yes → Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.
  - No ↓
- **Is the distance between the TV sets or radios and the indoor unit within 1m, or is the distance between the TV sets or radios and the outdoor unit within 3m?**
  - Yes → Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.
  - No ↓
- **Are the antennas damaged? Is the coaxial cable damaged? Is there any poor contact in the antenna wiring?**
  - Yes → Replace or repair the antenna. Replace or repair the coaxial cable.
  - No ↓
- **Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?**
  - Yes → Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
  - No ↓

Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).

Check the followings before asking for service.

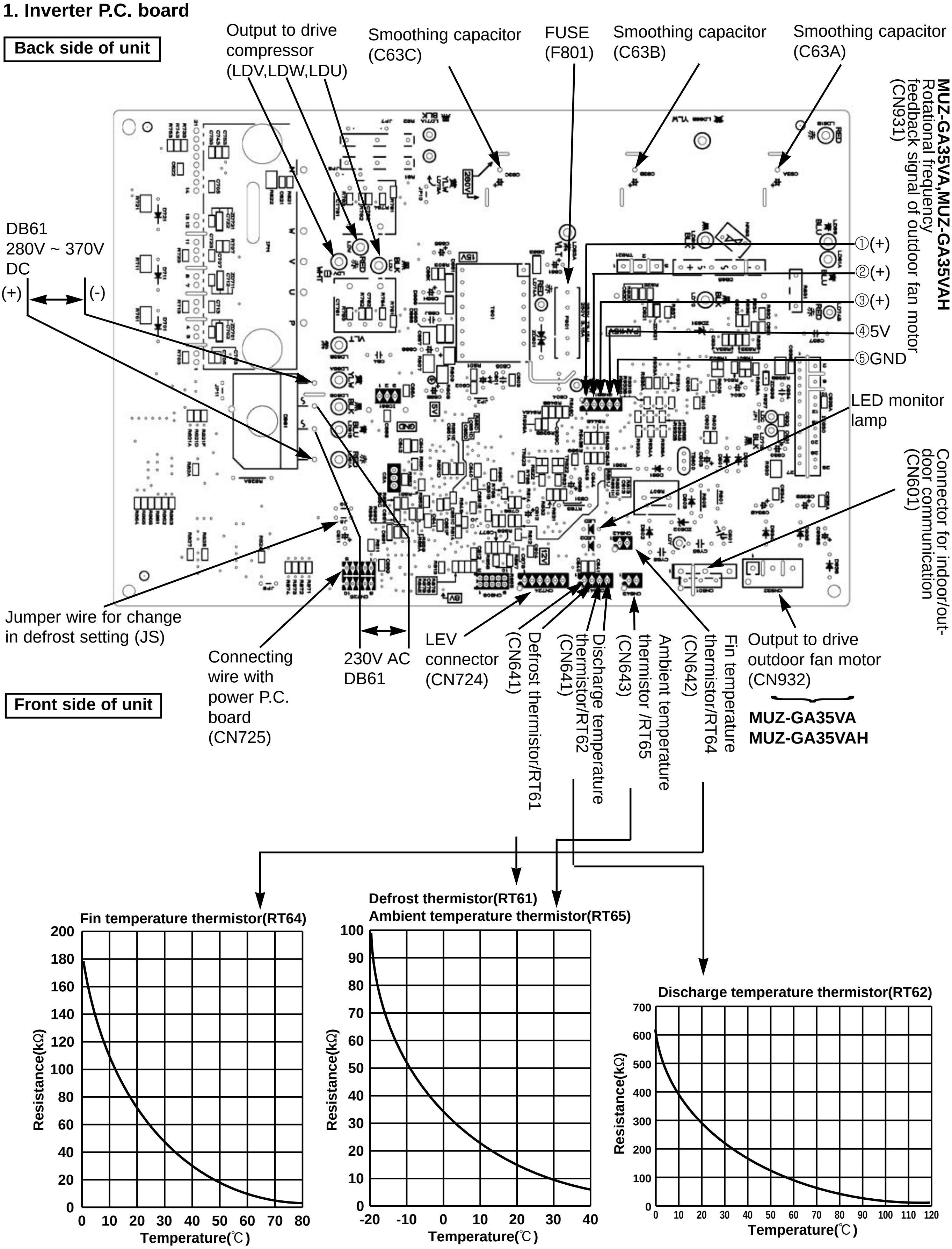
1.Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2.Channel, frequency, broadcast station affected by the electromagnetic noise
3.Channel, frequency, broadcast station unaffected by the electromagnetic noise
4.Layout of ;
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding wire, antennas, wiring from antennas, receiver
5.Electric field intensity of the broadcast station affected by the electromagnetic noise
6.Presence or absence of amplifier such as booster
7.Operation condition of air conditioner when the electromagnetic noise enters in.
   1)Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2)Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3)After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4)Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

After checking the above, consult the service representative.

11-7. Test point diagram and voltage.

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

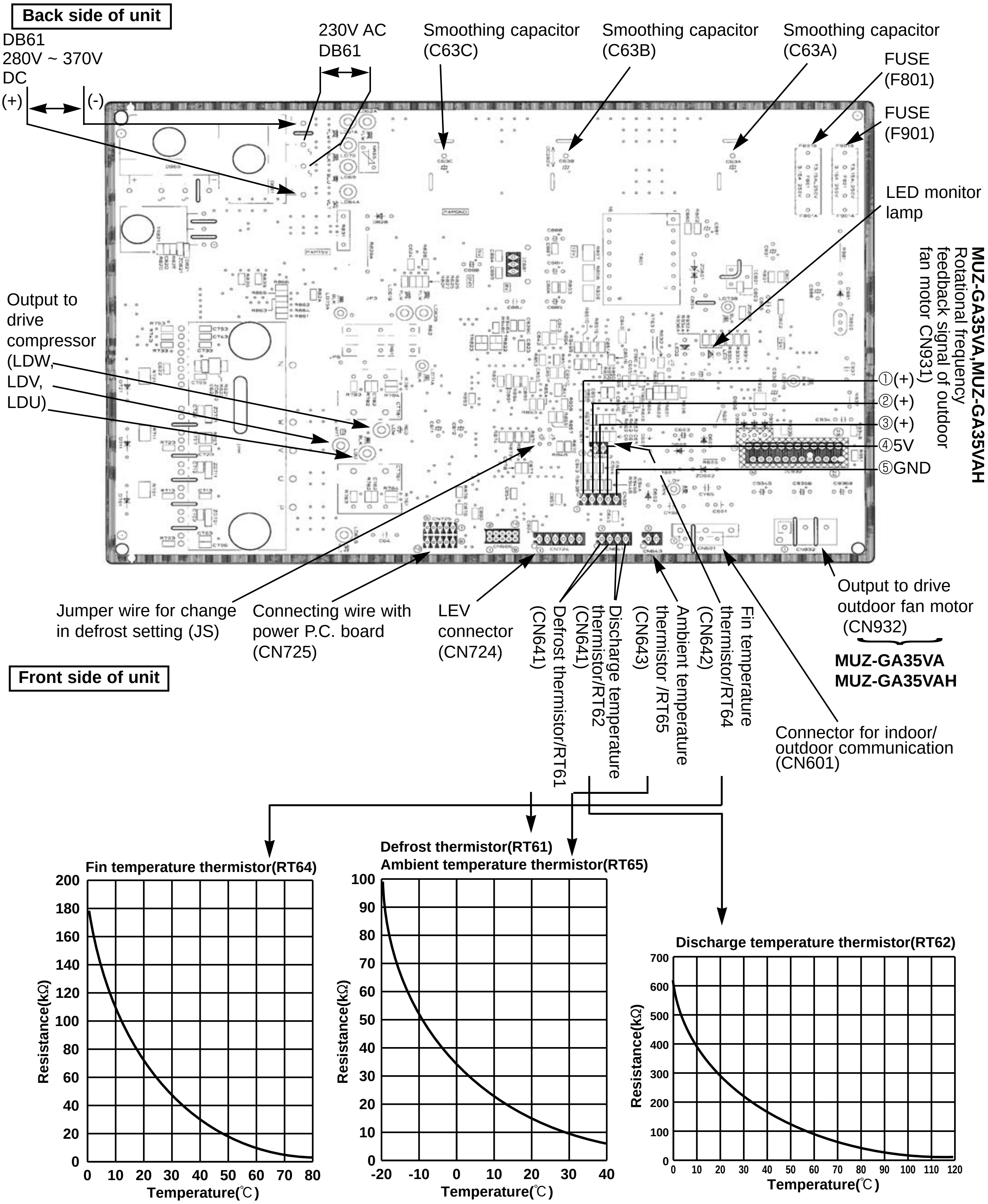
1. Inverter P.C. board



11-7. Test point diagram and voltage

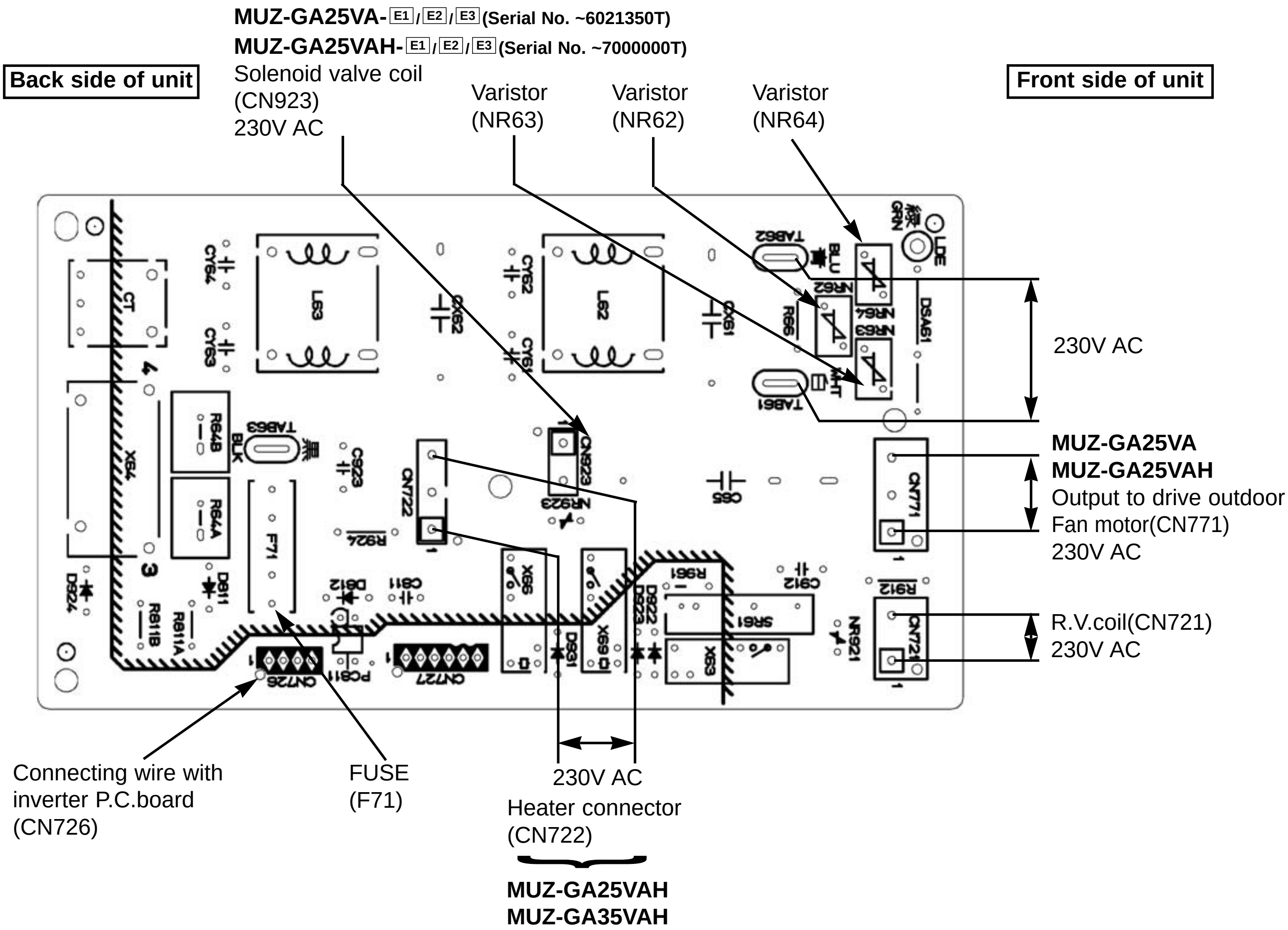
MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

1. Inverter P.C. board (Alternative)



MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

2. Power P.C. board

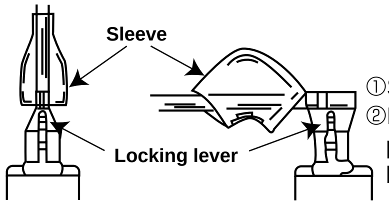


12 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

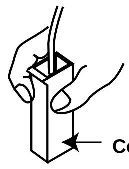
The terminal which has the locking mechanism can be detached as shown below.
There are two types (Refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

(2) The terminal with this connector has the locking mechanism.



①Hold the sleeve, and pull out the terminal slowly.

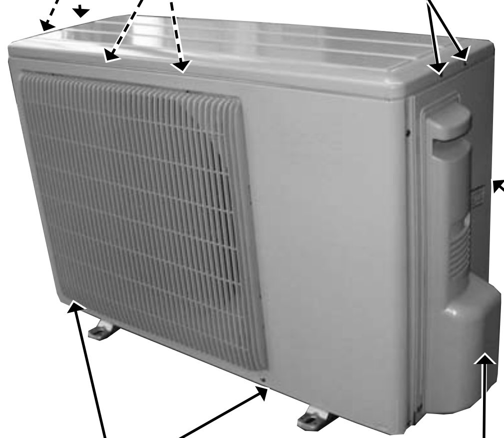
MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet (1) Remove the screw fixing the service panel. (See Photo 2.) (2) Pull down the service panel and remove it. (See Photo 2.) (3) Disconnect the power supply and indoor/outdoor connecting wire. (4) Remove the screws fixing the top panel. (See Photo 1.) (5) Remove the top panel. (See Photo 1.) (6) Remove the screws fixing the cabinet. (7) Remove the cabinet. (8) Remove the screws fixing the back panel. (9) Remove the back panel.	**Photo 1**

Photo 2



Photo 1



OPERATING PROCEDURE	PHOTOS

2. Removing the inverter assembly, inverter P.C. board and power P.C. board

(1) Remove the top panel, cabinet and service panel. (Refer to 1.)
(2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
(3) Disconnect the ground wires (See Photo 3.), the lead wire to the reactor and the following connectors;
<Power P.C. board>
CN721 (4-way valve)
CN771 (Fan motor) MUZ-GA25VA/GA25VAH
CN722 (Defrost heater) MUZ-GA25/GA35VAH
CN923 (Solenoid valve coil)
MUZ-GA25VA-E1/E2/E3(Serial No. ~6021350T)
MUZ-GA25VAH-E1/E2/E3(Serial No. ~7000000T)
<Inverter P.C. board>
CN931,CN932 (Fan motor) MUZ-GA35VA/GA35VAH
CN641 (Defrost thermistor and discharge temperature thermistor)
CN643 (Ambient temperature thermistor)
CN724 (LEV) MUZ-GA35VA/GA35VAH
(4) Remove the compressor connector (CN61).
(5) Remove the screws fixing the relay panel. (See Photo 3.)
(6) Remove the inverter assembly. (See Photo 3.)
(7) Disconnect all connectors and lead wires on the inverter P.C. board. (See Photo 4.)
(8) Remove the inverter P.C. board from the inverter assembly.
(9) Remove the screw fixing the power P.C. board. (See Photo 4.)
(10) Disconnect all connectors and lead wires on the power P.C. board.
(11) Remove the power P.C. board from the inverter assembly.

3. Removing R.V. coil

(1) Remove the top panel, cabinet and service panel. (Refer to 1.)
(2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
(3) Remove the inverter assembly. (Refer to 2.)
(4) Remove the R.V. coil. (See Photo 5.)

Photo 3

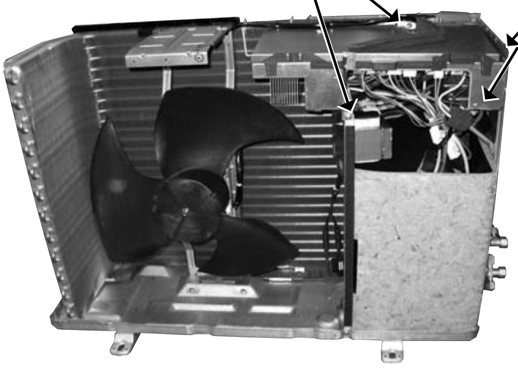
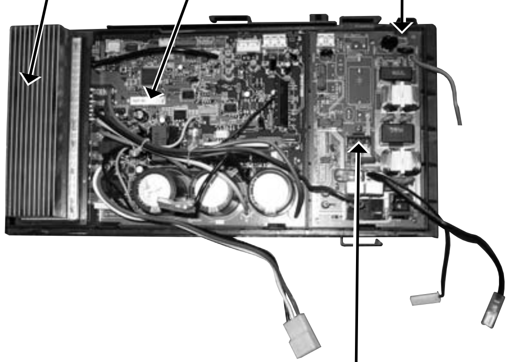


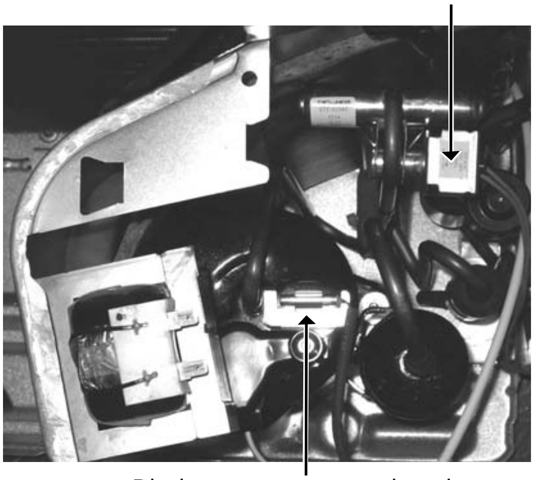
Photo 4



4. Removing the discharge temperature thermistor and defrost thermistor

(1) Remove the top panel, cabinet and service panel. (Refer to 1.)
(2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
(3) Remove the inverter assembly. (Refer to 2.)
(4) Pull out the discharge temperature thermistor from its holder. (See Photo 5.)
(5) Pull out the defrost thermistor from its holder. (See Photo 6.)

Photo 5



OPERATING PROCEDURE	PHOTOS

5. Removing outdoor fan motor

(1) Remove the top panel, cabinet and service panel. (Refer to 1.)
(2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
(3) Disconnect the connectors for outdoor fan motor.
(4) Remove the propeller nut.
(5) Remove the propeller.
(6) Remove the screws fixing the fan motor. (See Photo 7.)
(7) Remove the fan motor.

6. Removing the compressor and 4-way valve

(1) Remove the top panel, cabinet and service panel. (Refer to 1.)
(2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
(3) Remove the inverter assembly. (Refer to 2.)
(4) Recover gas from the refrigerant circuit.

NOTE: Recover gas from the pipes until the pressure gauge shows 0 kg/cm^2 (0 MPa).

(5) Detach the welded part of the suction and the discharge pipe connected with compressor.
(6) Remove the nuts of compressor legs.
(7) Remove the compressor.
(8) Detach the welded part of pipes connected with 4-way valve. (See Photo 8.)

Photo 6

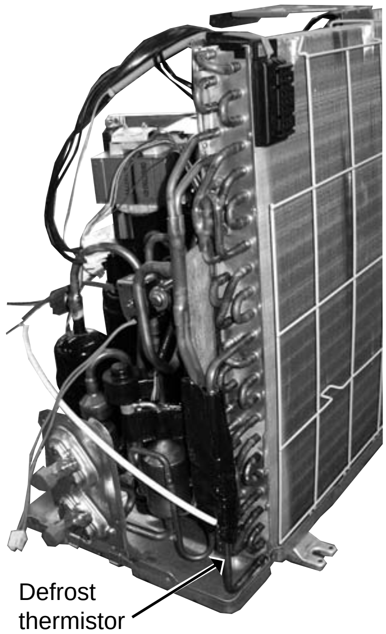


Photo 7

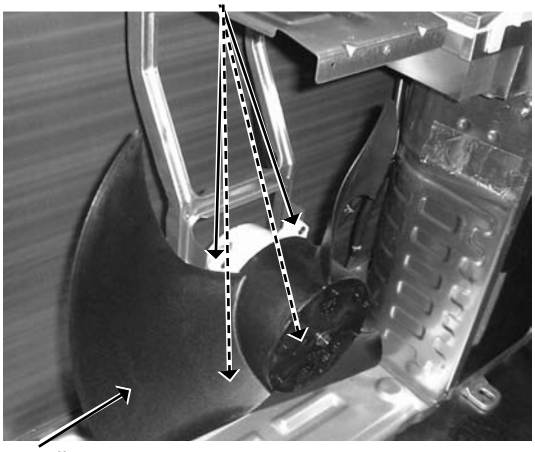
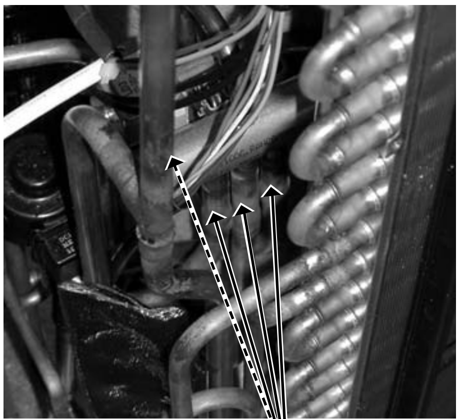


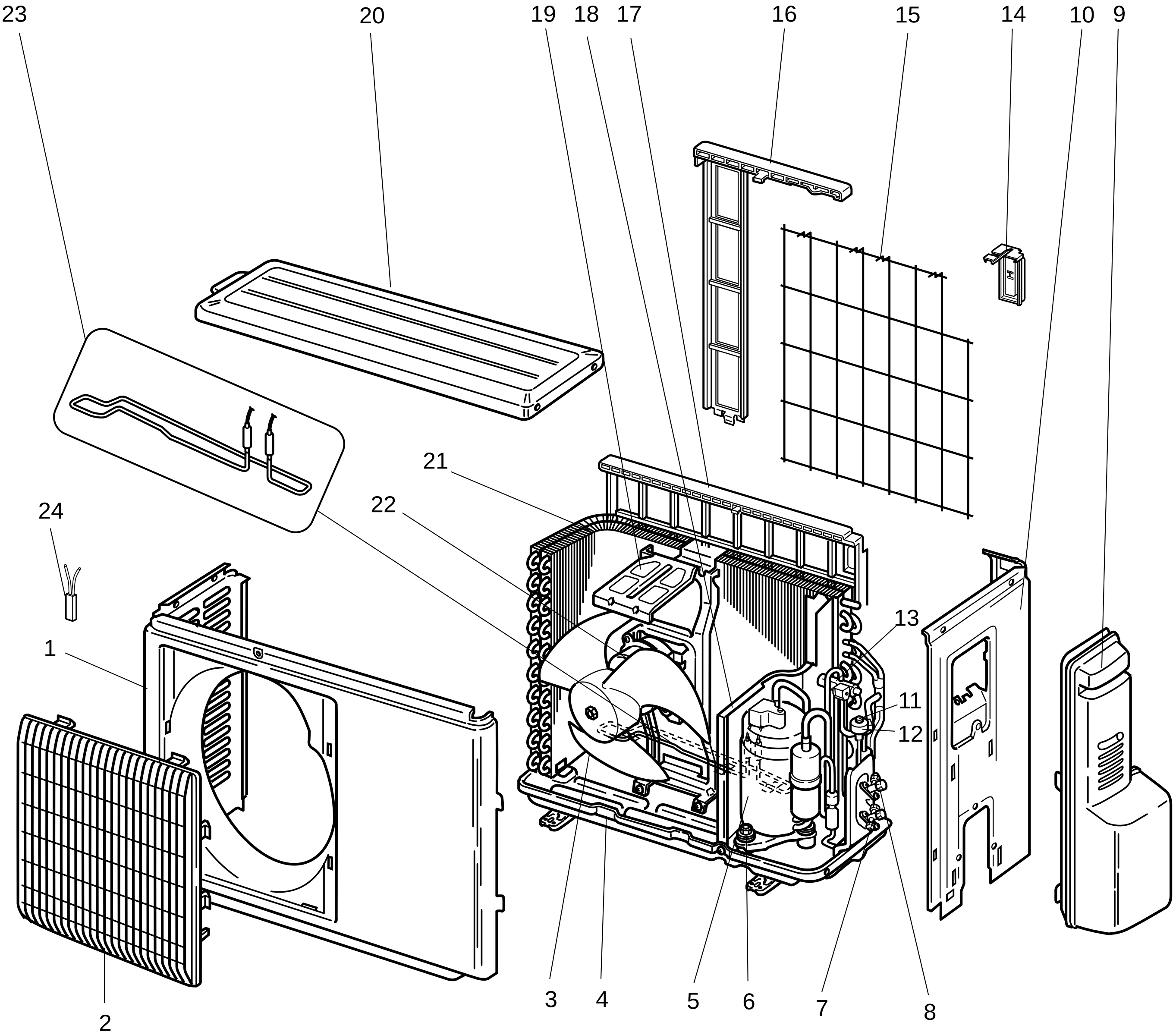
Photo 8



13 PARTS LIST (non-RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

13-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS



PARTS LIST (non-RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

13-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS

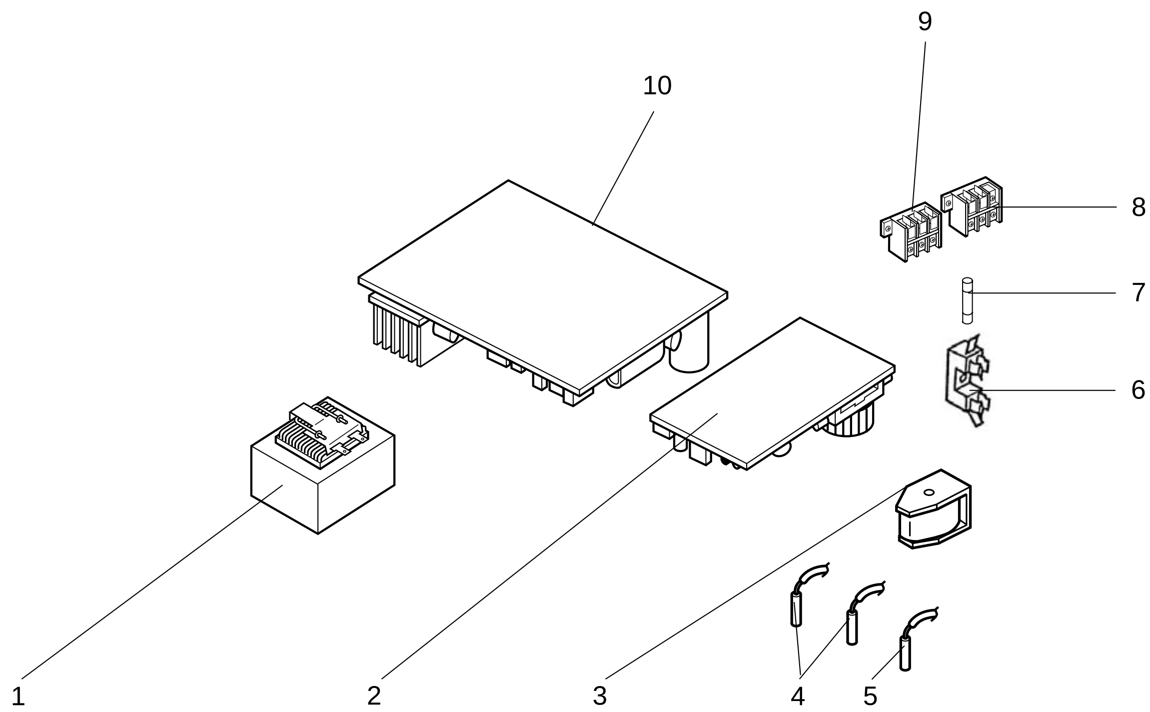
Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit MUZ-GA25VA-		MUZ-GA25VAH-		MUZ-GA35VA-		MUZ-GA35VAH-		Remarks
				E1	E2	E1	E2	E1	E2	E1	E2	
1	E02 927 232	CABINET		1	1	1	1	1	1	1	1	
2	E02 927 521	GRILLE		1	1	1	1	1	1	1	1	
3	E02 931 501	PROPELLER		1	1	1	1					
	E02 927 501	PROPELLER						1	1	1	1	
4	E02 927 290	BASE		1	1			1	1			
	E02 928 290	BASE				1	1			1	1	
5	E02 928 900	COMPRESSOR	MC	1	1	1	1					KNB065FDTH
	E02 927 900	COMPRESSOR	MC					1	1	1	1	KNB073FDVH
6	E02 065 506	COMPRESSOR RUBBER SET		3	3	3	3	3	3	3	3	3RUBBERS/SET
7	E02 927 661	STOP VALVE (GAS)		1	1	1	1	1	1	1	1	ϕ9.52
8	E02 927 662	STOP VALVE (LIQUID)		1	1	1	1	1	1	1	1	ϕ6.35
9	E02 927 245	SERVICE PANEL		1	1	1	1	1	1	1	1	
10	E02 927 233	BACK PANEL		1	1	1	1	1	1	1	1	
11	E02 927 640	EXPANSION VALVE						1	1	1	1	
12	E02 927 493	EXPANSION VALVE COIL	LEV					1	1	1	1	
13	E02 927 961	4-WAY VALVE						1	1	1	1	
	E02 931 961	4-WAY VALVE		1	1	1	1					
14	E02 928 079	THERMO HOLDER				1	1			1	1	
15	E02 928 525	CONDENSER WIRE NET				1	1			1	1	
16	E02 928 523	CONDENSER NET				1	1			1	1	
17	E02 838 523	CONDENSER NET		1	1			1	1			
18	E02 927 293	SEPARATOR		1	1			1	1			
	E02 928 293	SEPARATOR				1	1			1	1	
19	E02 899 515	MOTOR SUPPORT		1	1	1	1					
	E02 927 515	MOTOR SUPPORT						1	1	1	1	
20	E02 927 297	TOP PANEL		1	1	1	1	1	1	1	1	
21	E02 927 630	OUTDOOR HEAT EXCHANGER		1	1	1	1	1	1	1	1	
22	E02 931 301	OUTDOOR FAN MOTOR	MF	1	1	1	1					RA6V21-□□
	E02 927 301	OUTDOOR FAN MOTOR	MF					1	1	1	1	RC0J50- □□
23	E02 840 526	DEFROST HEATER	H			1	1			1	1	
24	E02 840 381	HEATER PROTECTOR	26H			1	1			1	1	
㉕	E02 927 937	CAPILLARY TUBE						1	1	1	1	ϕ3.0×ϕ2.0×240
	E02 096 936	CAPILLARY TUBE		1	1	1	1					ϕ3.0×ϕ1.4×800
	E02 156 936	CAPILLARY TUBE		1	1	1	1					ϕ3.0×ϕ1.4×500
㉖	E02 096 642	CHECK VALVE		1	1	1	1					
㉗	E02 932 490	SOLENOID VALVE COIL	21R1	1	1	1	1					
㉘	E02 931 492	SOLENOID VALVE		1	1	1	1					

PARTS LIST (non-RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

13-2. OUTDOOR UNIT ELECTRICAL PARTS

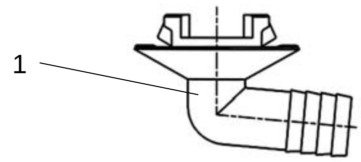


Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit								Remarks
				MUZ-GA25VA-		MUZ-GA25VAH-		MUZ-GA35VA-		MUZ-GA35VAH-		
				E1	E2	E1	E2	E1	E2	E1	E2	
1	E02 838 337	REACTOR	L61	1	1	1	1	1	1	1	1	
2	E02 927 444	POWER P.C. BOARD						1	1			
	E02 931 444	POWER P.C. BOARD								1	1	
	E02 928 444	POWER P.C. BOARD		1	1							
	E02 932 444	POWER P.C. BOARD				1	1					
3	E02 927 490	R.V. COIL	21S4					1	1	1	1	
	E02 928 490	R.V. COIL	21S4	1	1	1	1					
4	E02 927 306	THERMISTOR SET	RT61,RT62	1	1	1	1	1	1	1	1	DEFROST, DISCHARGE
5	E02 927 308	AMBIENT TEMPERATURE THERMISTOR	RT65	1	1	1	1	1	1	1	1	
6	E02 735 241	FUSE HOLDER		1	1	1	1	1	1	1	1	
7	E02 735 382	FUSE	F61	1	1	1	1	1	1	1	1	T20AL250V
8	E02 573 375	TERMINAL BLOCK	TB1	1	1	1	1	1	1	1	1	3P
9	E02 927 374	TERMINAL BLOCK	TB2	1	1	1	1	1	1	1	1	3P
10	E02 928 451	INVERTER P.C. BOARD		1								Including heat sink and RT64
	E02 932 451	INVERTER P.C. BOARD				1	1					Including heat sink and RT64
	E02 931 451	INVERTER P.C. BOARD						1				Including heat sink and RT64
	E02 934 451	INVERTER P.C. BOARD								1	1	Including heat sink and RT64
	E02 A77 451	INVERTER P.C. BOARD			1							Including heat sink and RT64
	E02 A78 451	INVERTER P.C. BOARD							1			Including heat sink and RT64
⑪	E02 127 382	FUSE	F71,F801,F901	1	1	1	1	1	1	1	1	T3.15AL250V
⑫	E02 661 385	VARISTOR	NR62,NR63,NR64	1	1	1	1	1	1	1	1	
⑬	E02 927 385	VARISTOR		1	1	1	1	1	1	1	1	

PARTS LIST (non-RoHS compliant)

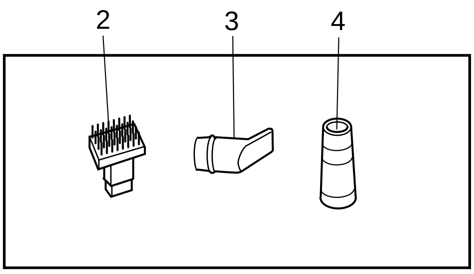
MUZ-GA25VA MUZ-GA35VA
13-3. DRAIN SOCKET

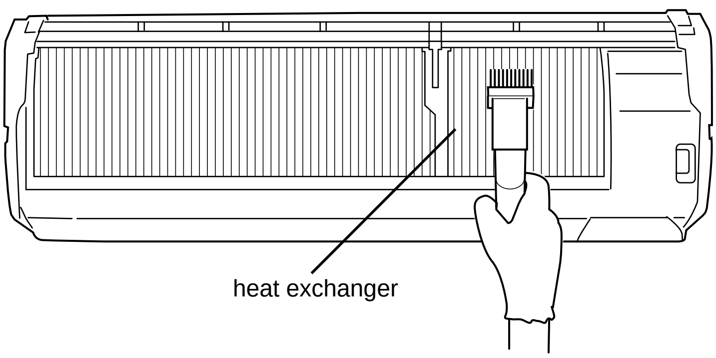


No.	Parts No.	Parts Name	Symbol in Wiring Diagram	Q'ty/unit MUZ-GA25VA-E1	MUZ-GA25VA-E2	MUZ-GA35VA-E1	MUZ-GA35VA-E2	Remarks
1	E02 838 704	DRAIN SOCKET		1	1	1	1	

MUZ-GA25VA -E1 MUZ-GA35VA -E1
MUZ-GA25VAH -E1 MUZ-GA35VAH -E1
13-4. QUICK CLEAN KIT

- You can clean the surface of the heat exchanger and line flow fan if you attach QUICK CLEAN KIT to your vacuum cleaner.





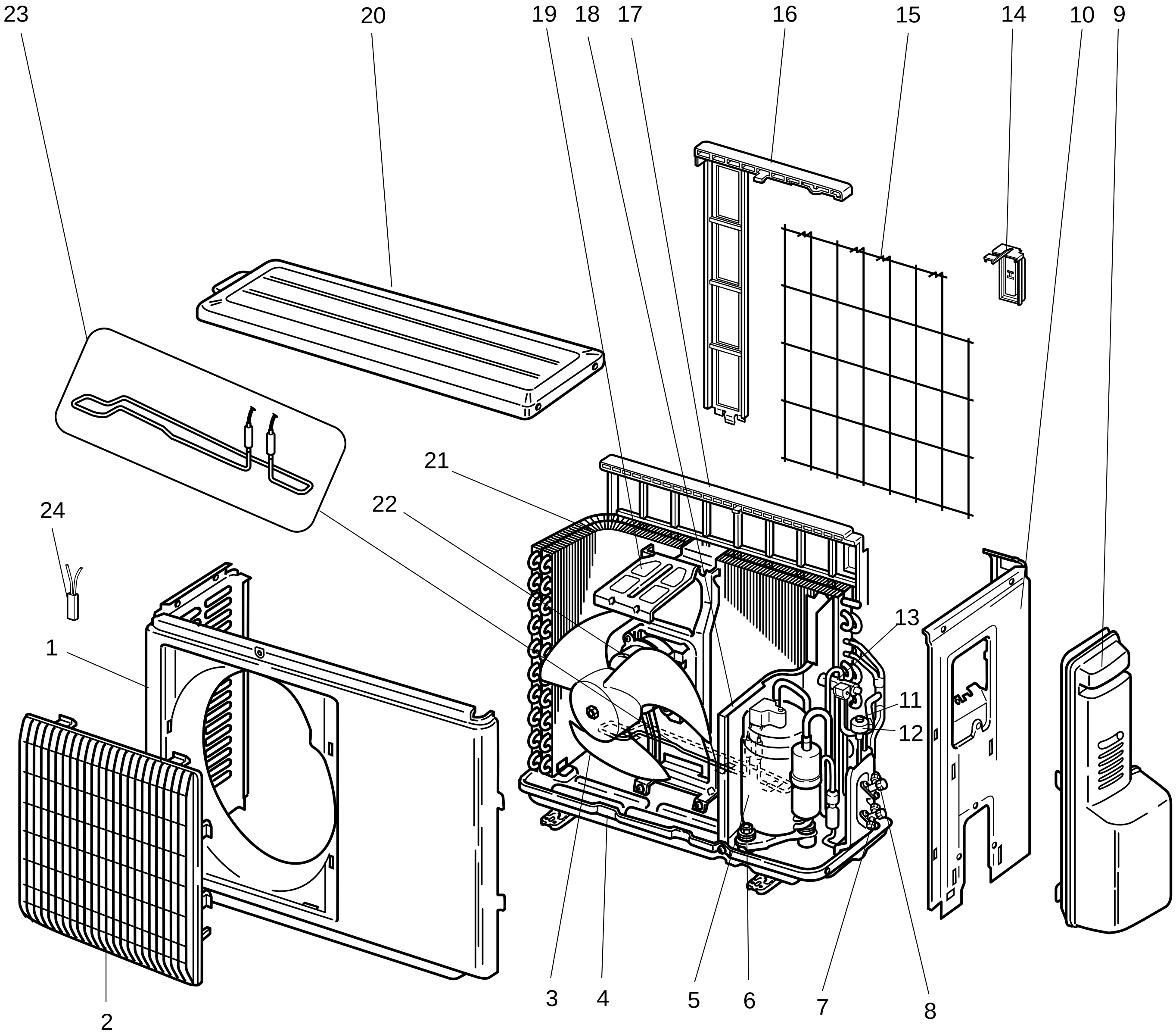
No.	Parts No.	Parts Name	Symbol in Wiring Diagram	Q'ty/unit MUZ-GA25VA-E1	MUZ-GA25VAH-E1	MUZ-GA35VA-E1	MUZ-GA35VAH-E1	Remarks
2	E02 927 113	BRUSH		1	1	1	1	
3	E02 927 115	NOZZLE		1	1	1	1	
4	E02 927 112	UNIVERSAL ADAPTER		1	1	1	1	

NOTE : Quick clean kit has been removed from E2 model.

14 RoHS PARTS LIST (RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

14-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS



RoHS PARTS LIST (RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

14-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS

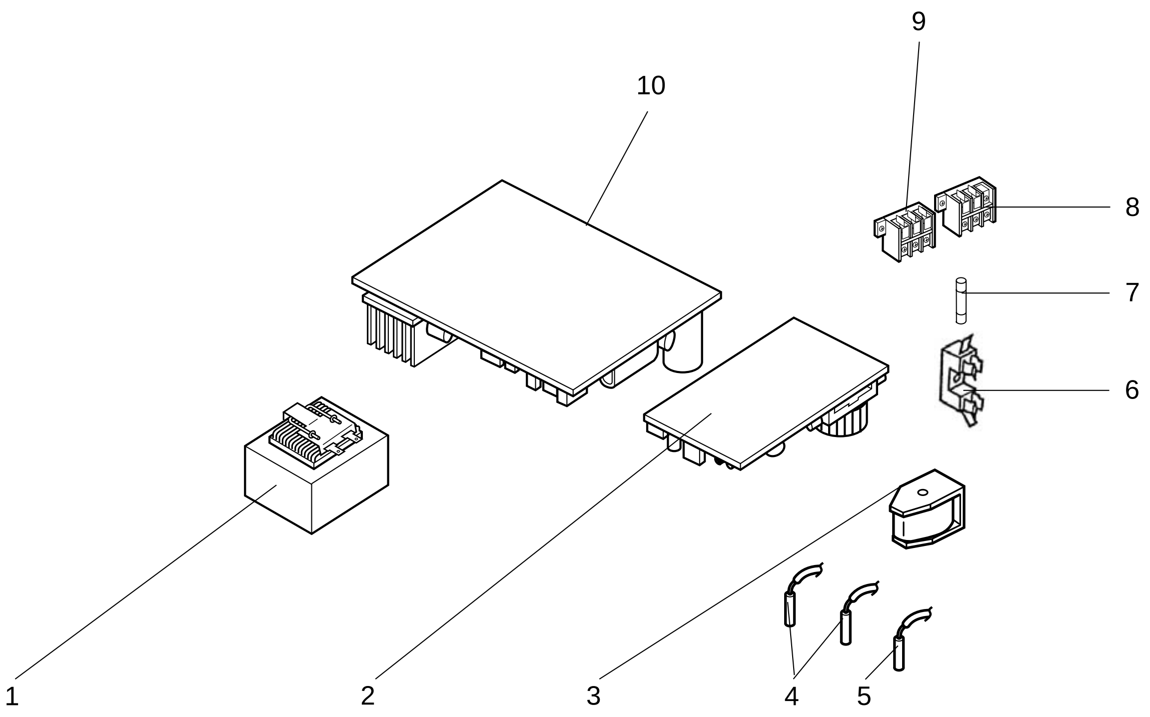
Part numbers that are circled are not shown in the illustration.

No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit MUZ-GA25VA-			MUZ-GA25VAH-			MUZ-GA35VA-	MUZ-GA35VAH-	Remarks
					E2	E3	E4	E2	E3	E4	E2	E2	
1	G	E12 927 232	CABINET		1	1	1	1	1	1	1	1	
2	G	E12 927 521	GRILLE		1	1	1	1	1	1	1	1	
3	G	E12 931 501	PROPELLER		1	1	1	1	1	1			
	G	E12 927 501	PROPELLER								1	1	
4	G	E12 927 290	BASE		1	1	1				1		
	G	E12 928 290	BASE					1	1	1		1	
5	G	E12 928 900	COMPRESSOR	MC	1	1	1	1	1	1			KNB065FDTH
	G	E12 927 900	COMPRESSOR	MC							1	1	KNB073FDVH
6	G	E12 065 506	COMPRESSOR RUBBER SET		3	3	3	3	3	3	3	3	3RUBBERS/SET
7	G	E12 927 661	STOP VALVE (GAS)		1	1	1	1	1	1	1	1	ϕ9.52
8	G	E12 927 662	STOP VALVE (LIQUID)		1	1	1	1	1	1	1	1	ϕ6.35
9	G	E12 927 245	SERVICE PANEL		1	1	1	1	1	1	1	1	
10	G	E12 927 233	BACK PANEL		1	1	1	1	1	1	1	1	
11	G	E12 927 640	EXPANSION VALVE								1	1	
12	G	E12 927 493	EXPANSION VALVE COIL	LEV							1	1	
13	G	E12 927 961	4-WAY VALVE								1	1	
	G	E12 931 961	4-WAY VALVE		1	1	1	1	1	1			
14	G	E12 928 079	THERMO HOLDER					1	1	1		1	
15	G	E12 928 525	CONDENSER WIRE NET					1	1	1		1	
16	G	E12 928 523	CONDENSER NET					1	1	1		1	
17	G	E12 838 523	CONDENSER NET		1	1	1				1		
18	G	E12 927 293	SEPARATOR		1	1	1				1		
	G	E12 928 293	SEPARATOR					1	1	1		1	
19	G	E12 899 515	MOTOR SUPPORT		1	1	1	1	1	1			
	G	E12 927 515	MOTOR SUPPORT								1	1	
20	G	E12 927 297	TOP PANEL		1	1	1	1	1	1	1	1	
21	G	E12 927 630	OUTDOOR HEAT EXCHANGER		1	1	1	1	1	1	1	1	
22	G	E12 931 301	OUTDOOR FAN MOTOR	MF	1	1	1	1	1	1			RA6V21-□□
	G	E12 927 301	OUTDOOR FAN MOTOR	MF							1	1	RC0J50- □□
23	G	E12 840 526	DEFROST HEATER	H				1	1	1		1	
24	G	E12 840 381	HEATER PROTECTOR	26H				1	1	1		1	
㉕	G	E12 927 937	CAPILLARY TUBE								1	1	ϕ3.0×ϕ2.0×240
	G	E12 096 936	CAPILLARY TUBE		1	1	1	1	1	1			ϕ3.0×ϕ1.4×800
	G	E12 156 936	CAPILLARY TUBE		1	1		1	1				ϕ3.0×ϕ1.4×500
	G	E12 642 936	CAPILLARY TUBE			1	1		1	1			ϕ3.0×ϕ1.4×400
㉖	G	E12 096 642	CHECK VALVE		1	1		1	1				
	G	E12 B45 642	CHECK VALVE			1	1		1	1			
㉗	G	E12 932 490	SOLENOID VALVE COIL	21R1	1	1		1	1				
㉘	G	E12 931 492	SOLENOID VALVE		1	1		1	1				

RoHS PARTS LIST (RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
MUZ-GA25VAH MUZ-GA35VAH

14-2. OUTDOOR UNIT ELECTRICAL PARTS

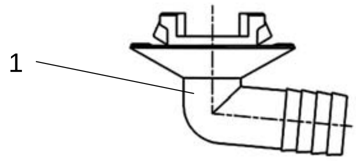


Part numbers that are circled are not shown in the illustration.

No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit								Remarks
					MUZ-GA25VA-			MUZ-GA25VAH-			MUZ-GA35VA-	MUZ-GA35VAH-	
					E2	E3	E4	E2	E3	E4	E2	E2	
1	G	E12 838 337	REACTOR	L61	1	1	1	1	1	1	1	1	
2	G	E12 927 444	POWER P.C. BOARD								1		
	G	E12 931 444	POWER P.C. BOARD									1	
	G	E12 928 444	POWER P.C. BOARD		1	1							
	G	E12 C01 444	POWER P.C. BOARD				1						
	G	E12 932 444	POWER P.C. BOARD					1	1				
	G	E12 C02 444	POWER P.C. BOARD							1			
3	G	E12 927 490	R.V. COIL	21S4							1	1	
	G	E12 928 490	R.V. COIL	21S4	1	1	1	1	1	1			
4	G	E12 927 306	THERMISTOR SET	RT61,RT62	1	1	1	1	1	1	1	1	DEFROST, DISCHARGE
5	G	E12 927 308	AMBIENT TEMPERATURE THERMISTOR	RT65	1	1	1	1	1	1	1	1	
6	G	E12 735 241	FUSE HOLDER		1	1	1	1	1	1	1	1	
7	G	E12 735 382	FUSE	F61	1	1	1	1	1	1	1	1	T20AL250V
8	G	E12 573 375	TERMINAL BLOCK	TB1	1	1	1	1	1	1	1	1	3P
9	G	E12 927 374	TERMINAL BLOCK	TB2	1	1	1	1	1	1	1	1	3P
10	G	E12 A77 451	INVERTER P.C. BOARD		1	1	1						Including heat sink and RT64
	G	E12 A79 451	INVERTER P.C. BOARD					1	1	1			Including heat sink and RT64
	G	E12 A78 451	INVERTER P.C. BOARD								1		Including heat sink and RT64
	G	E12 A80 451	INVERTER P.C. BOARD									1	Including heat sink and RT64
11	G	E12 127 382	FUSE	F71,F801,F901	1	1	1	1	1	1	1	1	T3.15AL250V
12	G	E12 661 385	VARISTOR	NR62,NR63,NR64	1	1	1	1	1	1	1	1	
13	G	E12 927 385	VARISTOR		1	1	1	1	1	1	1	1	

RoHS PARTS LIST (RoHS compliant)

MUZ-GA25VA MUZ-GA35VA
14-3. DRAIN SOCKET



No.	RoHS	Parts No.	Parts Name	Symbol in Wiring Diagram	Q'ty/unit				Remarks
					MUZ-GA25VA-			MUZ-GA35VA-	
					E2	E3	E4	E2	
1	G	E12 838 704	DRAIN SOCKET		1	1	1	1	

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